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S. W. Conrad

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S. Conrad
283

PEACE ON EARTH
GOOD WILL TOWARD MEN



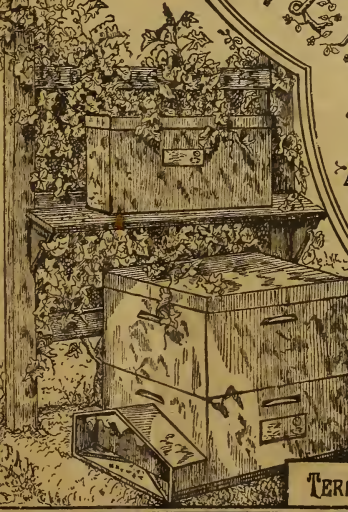
CLEANING
IN
BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY
A. ROOT



TERMS, ONE-DOLLAR PER YEAR.

FRANKLIN, DUNHAM, & CO.

SEED POTATOES

For the Coming Season; and Some other Things that have turned up since our List of Garden Seeds, etc., was given in our January issue.

Early Ohio.

The Experiment Station, Columbus, O., says there is nothing earlier.

Early Pearl.

The Experiment Station finds this about as early as the Early Ohio, and perhaps yields a little better.

Lee's Favorite.

This is a few days later than the foregoing, but yields better still. In our locality during the past season it has given enormous yields of extra fine potatoes. Prices, same as Early Ohio.

Empire State.

This, the Experiment Station considers as good a late or medium late potato as any before the public. They decide that the above four varieties are the cream of the list.

Beauty of Hebron.

This is preferred by Terry because it gives as good, or better yield than any other, and comes off early enough to admit of getting in wheat in good time. It is a standard early sort.

Any of the above potatoes sold as follows: 1 lb., by mail, 15 cts.; 3 lbs., 40 cts.; 1 lb., by express or freight, 7c; 1 peck by express or freight, 35 cts.; 1 bushel, \$1.00.

Henderson's New Bush Lima Bean.

The most important novelty for the year 1889, in the whole business of vegetable gardening, is Henderson's New Bush Lima bean. For years people have asked, "Does anybody know of a lima bean that grows on bushes, and does not need poles?" But until the present time no one has been able to answer. On account of the trouble of procuring poles and making beans run up them, a good many have decided that lima beans are too much bother; but after a year or two, when the neighbors had a supply of this delicious vegetable, and they hadn't any more, they have gone back to the poles again. Now, however, Peter Henderson all of a sudden astonishes us by announcing a genuine lima bean that not only shows no tendency to run, but bears immense crops; and, more wonderful than all, they are a great deal earlier than the pole lima beans. During the year 1888 he took good care to have them tested by many prominent men; and although we have never yet tried them on our own ground, there is no question but that they are all he has claimed for them. The only thing I can discover wherein the pole beans have the advantage is the smallness in size of the New Bush, and more labor in consequence, in shelling. We have made a purchase of 1000 packages; and while we have been obliged to sign a contract not to sell them for less than the established price, 25 cents a package, we are at liberty to offer them as premiums for subscriptions to our journal. Every one who sends us a new subscription to GLEANINGS can have a 25-cent packet of the new lima beans free. If you do not want to be bothered to hunt up a subscriber, just send us the cash for GLEANINGS for yourself for a year, after your present subscription expires. Or we are at liberty to send you one packet for 25 cents, five packets for \$1.00, or twelve packets for \$2.00. Peter Henderson says that "twelve packages will plant five rows fifty feet long, which is ample for a family." Now let me whisper in your ear, that the demand for these lima beans next year will probably be enormous, and we expect to plant every one of the 1000 packets that are not disposed of by June 1. Do you know how many made a big investment on the new Japanese buckwheat when it first came out? We shall, without doubt, have the same thing repeated, but probably on a larger scale, with the New Bush lima beans. We might mention here the friend who invested 75 cts. in Grand Rapids lettuce seed, and received from us \$50.00 in cash for the crop of seed he secured from his investment of 75 cents.

Ignotum Tomato.

During the past year we have explained several times that the Ignotum tomato was selected by the Michigan Agricultural college, from over 100 different varieties. It was an accidental sport from one package of seed received from a foreign country. A few seeds were furnished us to try, and from these we have the first Ignotum tomato seed ever offered for sale in the United States, and probably in the world. We do not offer this seed for sale, but we will send a packet, containing about 25 seeds, to every subscriber to our journal, GLEANINGS IN BEE CULTURE.

Dwarf Champion. Oz. 50c; lb. \$6.00.

This is a great acquisition for an early tomato. It is not only very early, but the shape is equal to any of our best kinds, and it stands up without staking, on account of its strong stalk. They are smooth and handsome, and ripen all over nicely, quite a little ahead of the Mikado.

Tomato Seed Saved from the Finest Specimens to Ripen.

For two years back we have been saving seed from the first and largest good-shaped tomatoes that ripened, and will now offer such seed, so saved, from the Mikado and Dwarf Champion (see description of these above and on page 3), at 5 cts. per packet of about 25 seeds to any who may want them. This will enable you to grow a few plants from our FIRST and BEST selection for a comparatively small outlay.

Kidney Wax Bean.

This is an improvement on the ordinary Golden Wax Bean, in giving us larger pods, more perfectly free from rust; and last, but not least, if you can not sell all of them for snap-shots, you can still bear them, as they are fully equal in size and quality to the larger white kidney bean; and if you do not

sell them all shelled, you have a good crop of dry White Kidney beans. We consider it quite an acquisition. Price 10 cents per ½ pint; \$2.00 per peck.

Golden Self-Blanching Celery. ¼ oz., 15 cts.; oz., 50c; lb., \$7.00.

This celery was raised by us for the first time during the past season. It is different from all others we have seen, in being not only more dwarf—i. e., shorter, but it is also thicker; in fact, the plant, when fully matured, is so thick and stumpy as to create surprise. The variety is also excellent, and the labor of banking up is not more than that of the White Plume. As to the keeping qualities, our experience indicates that it is a rather early celery, and should be used soon after approaching maturity. We shall test it this year side by side with the White Plume for our very earliest.

Extra-Early Turnips.

We have tested some of these which are advertised in the different seed catalogues; and while we find them as represented, much earlier than the staple turnips, they are, so far as we have tested them, inferior in quality, very strong in taste, and sometimes bitter. Last season we had beautiful turnips in June, on our market-wagon. They were Bloomsdale Early; but no one who bought them wanted any the second time. It seems the Ohio Agricultural Experiment Station at Columbus have had the same experience. Below is a letter from Prof. Green.

MR. ROOT.—Early Milan and Early Purple Top Munich were the earliest purple-top turnips that we tested, but both were of very poor quality. I do not know a good variety of this description better than the common Purple Top Strap Leaf. White Egg from Gregory was the best early variety that we had, and Early White Flat Dutch ranked next. White egg is as early as any, and the quality is excellent. W. J. GREEN, Ohio Agricultural Experiment Station, Columbus, Dec. 31, '88.

In view of the above we have omitted from our price list all early turnips; but if any of our readers have an early turnip of good quality, we shall be glad to receive some of the seeds for trial, and you may also send a specimen to friend Green, as above. Our experience is, that the White Egg and Purple Top Globe are both quite early, and excellent in quality. They may be, perhaps, ten days or two weeks later than some of the extra early.

Asparagus, Palmetto. Oz. 10c; lb. \$3.00.

We have given this new variety a trial beside the Colossal, and it is certainly a stronger and more robust plant.

Asparagus Roots. Palmetto, 10 for 10c; 75c per 100; \$6.00 per 1000. By mail, add 5c for 10, or 20c per 100.

Salsify, New Mammoth. Oz., 10 cts.; lb., \$2.50.

We have grown this side by side during the past season with the common salsify, and we find the roots larger, better shaped, and equally good in other respects; they are, therefore, without question an improvement. A very little improvement in such a matter is worthy of adoption, for when we once start with the improved kind it is just as easy to use it as the old or inferior kind. This was introduced from the Sandwich Islands.

A. I. ROOT, Medina, Ohio.

WHAT TO DO,

—AND—

How to Be Happy While Doing It.

The above book, by A. I. Root, is a compilation of papers published in GLEANINGS in 1886, '7, and 8. It is intended to solve the problem of finding occupation for those scattered over our land, out of employment. The suggestions are principally about finding employment around your own homes. The book is mainly upon market-gardening, fruit culture, poultry-raising, etc. I think the book will be well worth the price, not only to those out of employment, but to any one who loves home and rural industries. Price in paper covers, 50 cts.; cloth, 75 cts. If wanted by mail, add 8 and 10c respectively.

A. I. ROOT, Medina, Ohio.

THE WINTER CARE OF HORSES and CATTLE.

THE MOST HUMANE AND PROFITABLE TREATMENT.

BY T. B. TERRY.

Although the book is mainly in regard to the winter care of horses and cattle, it touches on almost every thing connected with successful farming—

SHELTER, COMFORT, FEEDING, EXERCISE, KINDNESS, DIFFERENT SORTS OF FEED, A FULL TREATISE ON THE MOST ECONOMICAL WAY OF SAVING MANURE.

A full description of Terry's model barn is also given.

PRICE: 40 Cts.; by Mail, 43 Cts.

A. I. ROOT, Medina, O.

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Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 6 lines, and you must say you want your ad in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements.

WANTED.—To exchange for extracted honey, a 10 h. p. horizontal engine, worth \$200. I will give somebody a rare bargain. Speak quick.
15tdfb C. H. SMITH, Pittsfield, Mass.

WANTED.—To exchange one of Livingston's farm feed, or grist mills, for hand or power, as good as new, for Barnes foot-power saw. 2-3-4d
H. L. FISHER, Milford, Kos. Co., Ind.

WANTED.—To exchange 250 colonies of bees, for horses, mules, wagons, buggies, and 4 h. p. engine, or any thing useful on a plantation.
21tdfb ANTHONY OPP, Helena, Phillips Co., Ark.

WANTED.—To exchange pure Brown Leghorn eggs and cockerels (Todd strain) for any thing useful. Write first. A. F. BRIGHT,
3ftdb Mazeppa, Wabasha Co., Minn.

WANTED.—Two students for the coming season.
GEO. E. HILTON, Fremont, Mich. 4-5d

WANTED.—To exchange Turner raspberry-plant, for improved poultry eggs or bee-supplies, or fine pig. G. F. TYLER,
3-4d Honey Grove, Fannin Co., Tex.

WANTED.—To exchange a new 8x12 self-inking Monumental press, with a lot of type, cases, etc.; one 240-egg self-regulating incubator; one Monarch brooder, for 200 chicks; one brooder for 100 chicks, for 2 or 3 H. P. boiler and engine, section machine, cigar-box planer, honey, alsike clover seed, or offers. J. T. FLETCHER,
3-4d Clarion, Clarion Co., Pa.

WANTED.—To exchange a lot of Turner and Crimson Beauty raspberry-plants for other nursery stock, Italian queens, sections, eggs for hatching, etc. Write first. E. R. MILLER,
3-4d Garden City, Cass Co., Mo.

WANTED.—To exchange one well-drill, good as new, made in Aurora, Ill., cost \$450; will value at \$200, and exchange for bees or any kind of bee-supplies. This is a rare bargain. Address 3-4d
S. RAY HOLBERT, Watson, Marion Co., W. Va.

WANTED.—To exchange a Webster's Unabridged Dictionary for extracted honey or bees, with some one not too far distant. JOHN A. GEETING,
4d McKeesport, Pa.

WANTED.—You to send for my new price list of Imported and American Italian queens. Can ship as early as the earliest. R. H. CAMPBELL,
3ftdb Madison, Morgan Co., Ga.

WANTED.—You to send for my illustrated Price List of supplies; Bees, Queens, etc. 4-5d
GEO. E. HILTON, Fremont, Mich.

WANTED.—To exchange 160 acres of fine land near Watertown, Dakota, for property in some good location for bee-keeping, or would take stock if not too far from here, or an apiary, in part payment, or offers. J. L. COLE,
3-4d Carlton Center, Barry Co., Mich.

WANTED.—To exchange for honey or offers, about 25 colonies of Italian bees, in new, movable-frame hives, frames 9½x12¾ inside measure; 8 frames to the hive; also one second-hand Barnes foot-power combined saw.
CHAS. DORFMAN, Pittsburg, Tex.

WANTED.—To exchange one American Incubator, 250-egg capacity, about 50 nuclei, 2, 3, and 4 frame, 20 cts. each, about 50 Simplicity hives, 10 frame, \$1.00 each, for horse-power, corn-grinder, or any thing useful to a farmer. GEO. W. BAKER,
4-5d Milton, Wayne Co., Ind.

WANTED.—To exchange, house and lot with grapevine apiary of 50 colonies Italio-Carniolans. Good location, and a good property, at a bargain. Also want to buy or rent an apiary in good location. JNO. C. CAPEHART, St. Albans, W. Va.

WANTED.—To exchange one Jones wax-extractor, 275 side-opening sections, 375 ¼-lb. sections, 500 separators for Heddon case, 20 Simplicity hives, one Lamb knitting-machine, 50 Jones honey-cans, 5 lb.; 200 Concord grapevines, for 20 to 24 inch circular saw, type-writer, bicycle, camera, bees, or supplies. J. A. GREEN, Dayton, LaSalle Co., Ill. 4d

WANTED.—To exchange Italian bees for timber or a "Springfield roadster." L. HEINE,
3ftdb Bellmore, Queens Co., N. Y.

WANTED.—Bee-keepers in Missouri, Kansas, Nebraska, and Arkansas to learn something of value by addressing Rev. E. T. Abbott, St. Joe, Mo. 4-5

WANTED! Bee-Help. Will engage on favorable terms two young men, desirous of learning practical apiculture. None but strictly temperate need apply. S. I. FREEBORN,
4-7d Ithaca, Wis.

WANTED.—Correspondence with parties having Japanese buckwheat to sell, or exchange for supplies. JOS. NYSEWANDER, Des Moines, Ia. 4d

WANTED.—Situation in an apiary for the season of 1889, from 6 months to a term of years. S. W. WHITE, Liberty, Clay Co., Mo. 4-5d

WANTED.—To exchange one cutter-head, one dovetailing mandrel with saws, one six-inch rubber-belt, 30 ft. long; 50 ft. of three-inch rubber-belt, all as good as new, for bees or bee-keepers' supplies; also one six-inch Pelham fdn. mill. 4ftdb
THOMAS GEDYE, Kangley, LaSalle Co., Ill.

WANTED.—To sell or exchange, Italian bees and queens, and supplies. Address
OTTO KLEINOW,
No. 150 Military Ave., Detroit, Mich.

1889. Italian Queens. 1889.
For \$1.00 From Jan. till June.
2-4-6d N. ADAMS, Sorrento, Lake Co., Fla.

FOR SALE. In Winter Park, Fla., 5-acre
Orange-groves. Circular free.
4d Address J. B. LA MONTAGNE, Orlando, Fla.

DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL. See advertisement in
another column, 3ftdb

a good many ways. Little annoyances of which you can hardly complain may make every visit to be dreaded; whereas, with the right people, and the right behavior on *your part*, every visit will be anticipated with pleasure on both sides.

You may happen on a location otherwise suitable, only that it may be used as a pasture for farm stock, as many orchards are. Beyond the occasional displacing of a hive, I never knew any harm to come from this; and E. France says, "All five of our out-apiaries are used by owners of the land for pasture for farm stock, horses, cattle, pigs, sheep, etc., including poultry."

Marengo, Ill.

C. C. MILLER.

Friend M., may I suggest the importance of being "nice people" yourself? and, in fact, I do not believe that anybody ought to think of starting out-apiaries unless they are of the class that "thinketh no evil," "suffer long," etc.

HOW TO SELL HONEY, AND HOW TO MAKE MONEY.

VALUABLE SUGGESTIONS TO PRODUCERS.

IN my last letter to GLEANINGS I promised to write an article on the above subject. What I shall say at this time will refer to making sales direct to consumers. As I have succeeded so well in this, it may be due me to say that, whatever I may write on this subject, can not but be an advantage to many.

Here, we are not often blessed with good crops of honey; but even in seasons of bountiful yields, when choice comb honey is offered at 12½ cts. per lb., and 11 lbs. of finest extracted given for \$1.00, I never had to sell *my* honey at such low figures.

When seasons do occur where large crops of surplus have been secured, it is bad policy to force it all on the market the same year at unpaying prices, as it is altogether probable that the crop will be a light one the succeeding year. It is true, that comb honey looks its best when new, and should find a market at the earliest opportunity; but extracted honey, when properly cared for, will keep perfectly for years. If the price will not justify this year, it is sure to do so another. Here let us score one more point in favor of extracted honey; and so long as I can sell it at the same price I can get for honey in the comb, I'll keep on scoring points in its favor. I shall produce but little more comb honey; and as my purchases of honey in this shape generally result in loss from breakage by careless handling of the transportation companies, I have decided to have no more shipped to me at my own risk.

It may be urged, that it requires more time and greater effort to sell liquid honey. I think not; but even if this is true, it is a good thing. I can make twice the money producing it, or on that which I purchase, that I can on comb honey. The majority of those who make a specialty of producing honey have ample time to devote to making sales of their honey during the fall and winters, which time they would be glad to have profitably employed. Why, this unoccupied time is the chief trouble to many of the craft; then why not employ profitably to ourselves this time in selling our product at paying prices, direct to consumers, rather than suffer that which justly belongs to us to go into the hands

of speculators who may not—often do not—pay the shipper any thing? I have strong suspicions—judging from a complaint that was made recently in one of our bee-journals—that several barrels of honey which I bought of a certain commission dealer was obtained from a bee-keeper who received no pay for his honey.

Having secured a crop of honey, remuneration for toil depends entirely on the price the apiarist obtains from it. To those who have hitherto sold their honey at prices which have failed to satisfy you, I will now offer a few hints on "how to sell honey."

The great crop of honey obtained in 1886 filled this country to overflowing, and the bottom fell clear out of prices, as you all know. Well, I got out all right, and made money. I started a peddling wagon, driving through the country, selling to farmers and villagers, and my honey was all gone at good prices, almost before I was aware of it. This season I had no surplus, but have bought tons and tons of it at low enough figures, from dealers to whom some good bee-keepers had sent it for a "big price." Some changes have been made in my tactics this season; and as they have pleased me, I will give them to the reader. I have two sons, aged 17 and 19 respectively. These young fellows have learned how to sell honey too. Provided with order-books and samples of honey in small glass jars, they are ready to solicit orders in any town or city. Taking streets in regular order, every family is offered an opportunity to buy. Usually a few names of the first families of the town are secured, which serve well as leaders.

It is surprising, when these names are shown, how readily others fall in line with *their orders*. When a town is to be worked for the first time, the boys will say, "Papa, you had better tackle that place, as you can work the racket on 'em better than we can."

To become an expert in the art of selling liquid honey, tact, as well as experience, plays an important part. One must not talk as a drummer fresh from a commercial house would, but just as a farmer having a little honey to sell. Success in making sales depends largely on the manner of presenting the case. As a help, I will give an example.

Should the lady of the house answer our call, we would, with some dignity and a pleasantness of manner, bid her the time of day. At once the impression is made that a gentleman, not a tramp, is present, and an invitation is given to "come in." This is what we want, as it gives us an opportunity to become somewhat acquainted with our customer; and then we can give the *baby* and *all* a taste of honey, which is sure to get the children to say, "Mamma, do buy some, it's so nice." At this juncture we say, "Oh, yes! you see" (exhibiting the long list of names on the order-book) "nearly all the folks in town are giving me orders." This will generally "bring down the house;" but if the case requires more talking, we fill in the chinks by explaining the medicinal qualities of honey—how good it is for colds, coughs, often saving doctors' bills, etc. If this doesn't do the work, you'd better waste no more time. We never take orders for less than one dollar's worth, as we find it doesn't pay.

When orders for a few thousand pounds have been taken, we begin at the starting-point to deliver. If roads are good, and distance not too great,

our team is sent with the honey, and necessary appliances for rapid delivery; otherwise we ship to destination, hiring a team to make deliveries. As a rule, honey is taken for use of team, boarding, lodging, etc. We carry about all the honey in 60-lb. tin cans, screw caps, two in a case. One case is made large enough to admit, when cans are raised up, an oil-stove under them, that honey may be kept thinned, so it may be quickly run into the retailing-can, which holds 150 lbs., with gate soldered firmly, and this can is also raised in its case so that vessels may go under the gate, and an oil stove beneath the can. With this arrangement the honey is made to run out at once. Without this we could not get along in cold weather. We always take 50 to 100 lbs. more honey along than our orders call for; but even then, seldom have any to carry back.

Now, I am aware that many will say, after all. "Oh! I can never go to all this trouble to sell my honey; it won't pay me. I'll just do as I have been doing—ship my honey to some dealer, and let him sell it for me." Well, then, all right; do so, and I will get some of it cheap, and make the profit you lose—that is all.

I made a clear profit, in one day's sales, this fall, of \$26.00 on honey which some of you bee-keepers shipped to a commission man, and the price I paid for the honey may have satisfied the bee-keeper who produced it too. The least pay I have had selling direct to consumers this fall and winter was \$5.00 a day. Did my health permit any thing like constant work in the business, I would ask for nothing better.

Before closing I wish to say that I know there are many apiarists so located that their honey *must* be shipped to distant markets; but where there is anything like a home market, use it, and use it well.

J. A. BUCHANAN.

Holliday's Cove, W. Va., Jan. 23, 1889.

Friend B., I presume you well remember that, about the time GLEANINGS was started, and for several years afterward, I was perhaps the strongest and most earnest champion of extracted honey, and it was with great reluctance that I finally gave way so far as to agree that comb might be almost as profitable, all things considered. I do believe you are right in regard to selling honey—that is, if the man who produces it has unoccupied time on his hands; and if he has not, I am inclined to think that he can hunt up some one who will dispose of his honey in the way you mention, to a good deal more profit than sending it to commission houses. Circumstances, however, may alter cases. A commission man who loves his business, and loves his customers' interests, as well as his own, would be a good deal in the line of somebody taking up the kind of work you describe. I also like the idea of taking a sample of the honey around first, and taking orders before delivering. The Moore brothers, whom we have mentioned once or twice before, have been for years doing this same kind of business; and they take great cities like Toledo and Cleveland, and canvass them thoroughly. For the first time this winter we have been selling not only honey, but the produce of our market garden, in just that way. The mild weather has made the roads so bad that it seemed too bad to ask a horse

to lug heavy vegetables around through the mud, before we knew where they were to be delivered; therefore the boys go out in the morning first and take orders just as you have described. If they sell enough to warrant taking a horse, then a horse is used; but a good deal of the time they use a couple of our light wheelbarrows, and get along quicker than even a horse. When there is sleighing they use light sleds, with a light box. In this way our fruit and vegetable rooms and cellars can be always kept orderly. The one who takes the orders goes and puts up in neat packages just what he wants and no more. The fruit and vegetables are not bruised by being bumped around in a wagon, and the honey is not mashed and soiled. Packages are handed to the purchaser, clean and tidy. We visit our customers every other day. The onions and lettuce and radishes—yes, and spinach too—can grow in our cold greenhouses until they are wanted, so we have no wilting and no stale goods on hand.—The picture you give us, of a father working side by side with his boys, is indeed a pleasant one; and although you do not mention it, friend B., I suppose that you and your boys have learned how unprofitable it is to have quarrels or any thing the least unpleasant with the people you call upon. One who goes from house to house needs not only tact but gentility. The suggestions you give us are very valuable.

CELLAR WINTERING.

SOME POINTS WELL TAKEN BY GEO. E. HILTON.

AS I am laid up for repairs with rheumatism, I have thoroughly digested GLEANINGS for Jan. 15, and will say a few words in conclusion.

CELLAR WINTERING VS. OUTDOOR WINTERING IN CHAFF HIVES.

For three winters I have been experimenting with a cellar above ground. The walls are 26 inches thick, 24 inches of which are sawdust, two inches air space, and then lathed and plastered inside. There is a cement floor. The only ventilation it has is a 5-inch pipe about the center, running within 2 inches of the cement floor. I have put in about 40 colonies each winter, a few in single-walled hives, the remainder in chaff hives, packed the same as outdoors, only the cover is removed. The cellar is 10x24x6 ft. high. They have wintered successfully every winter, only not as dry and bright as outdoors. My preference is chaff hives and outdoor wintering.

SECURING AN EXCLUSIVE LOCALITY, ETC.

I can hardly agree with you and friend Dilworth in regard to "exclusive right of territory." In the first place, I do not think it would be right; and in the second place I don't think it possible. I doubt very much your ability to find a community where *all* could be bought; and he of whom you could not purchase the agreement not to keep or allow bees to be kept on his premises would either keep or lease to some one else who would pasture the other fields you had purchased the right of, and what redress would you have? I see no other way than to let all try it who want to, and then let the "survival of the fittest" have the pasturage. A few

more seasons like the past two, and all survivors will have all the pasturage they need.

STORES FOR WINTER; LARGE CONSUMPTION — SEE QUESTION 102.

"Which is the more profitable—colonies that require from 20 to 25 lbs. to carry them through, or those that will get along on from 5 to 10 pounds?" Most decidedly, the former; and could I get them to use up another 10 lbs. between April 15 and June 1, I should consider it a good investment in this latitude. An extra 10 pounds of old fall honey means 25 lbs. of white clover, if it is in the fields. My bees go into winter quarters with nearer 40 lbs. than any thing else, and I have not only been successful in wintering, but in a good surplus also.

NOTES OF TRAVEL.

They are very interesting indeed. I am glad to hear friend Perrine has risen above his losses in the interest of apiculture, and of that wonderful ranch of our good friend David C. Cook. May God spare him yet many years of usefulness, as well as yourself, is my prayer.

GEO. E. HILTON.

Fremont, Mich.

I am glad to see so favorable a report for chaff hives and outdoor wintering, away up in the northern part of Michigan. In regard to bees and neighbors, I should like to have some of the friends try it and report. Go out and canvass your neighborhoods, and see what it will cost you to get a promise from each land-owner to agree not to keep bees, say for the next five years.

GIVING BEES WATER WHILE IN THE CELLAR.

ANSWERS TO PRACTICAL QUESTIONS.

A SUBSCRIBER to GLEANINGS propounds the following question: "Do bees in the cellar during winter need water? and if so, how is it given?" Bees that are wintering properly need no water, for, inasmuch as no brood is reared in the cellar, of any amount, they would have no use for it, even should they take it. As far as my experience goes, water is used by bees only during the time there is brood in the hive. Out of the colonies which I winter in the cellar, not one in ten have any brood, except a few eggs, when the bees are set from the cellar, whether the time of setting from the cellar be March 15th or May 1st. The year I kept the cellar warm with the oil-stove, brood-rearing was carried on to quite a large extent, so that the bees were very uneasy; and to see what effect water had on them I gave some to a few in a sponge at the entrance. This seemed to make those colonies more quiet; but as all eventually died, I do not know whether it was any benefit to them or not. One or two that brooded quite largely had enameled cloth over them; and although considerably weakened when set out in the spring they came out so as to finally make quite good colonies. These were more quiet than any of the rest, and I laid it to their getting water from the condensed moisture on the under side of the cloth. All know that moisture will so condense on these sheets as to form large drops, which is a great injury to weak and feeble colonies, by its dropping on the bees and making them so wet that they finally perish. However, I do not think it is best for bees to breed in the cellar, hence say that water is not necessary.

FRAMES FILLED WITH BROOD.

The same subscriber wishes to know how I compel bees to fill the brood-combs with brood in advance of the honey harvest. This is usually done by what is known as "the spreading of the brood." This, in short, is as follows: As early in the season as I think it will answer, or when there is little danger of very frosty nights, the brood which is found in the hive is reversed, by which is meant that the combs which now occupy the center of the brood-nest are placed on the outside, and those which are on the outside are put in the center. This puts the combs having the most as well as the oldest brood on the outside, while the young brood, which usually occupies only a small space in each comb, is placed in the center. This causes the queen to fill these partly filled combs very quickly with eggs—much more so than she otherwise would, so that we make quite an advance over what would have been had they not been disturbed. In a few days more, a comb from the outside of this brood is placed in the center of the brood-nest, which causes the queen to fill this comb quickly; and so on till all of the combs are filled with brood. If all are not quite as full of brood as you would like them, when the honey harvest arrives, reverse the brood-nest again, the same as you did at first, when you will have all of the combs full of brood, where the bees would be likely to store their first honey, thus causing the honey to go into the boxes, as the queen is never crowded with honey from the center of the brood-nest out toward the outside of the hive. The crowding of the queen is done from the bees putting their honey in the tops of the combs and at the sides, and then narrowing down on the brood space. If there are empty combs in the brood-chamber when the harvest arrives, these should be taken away, and the space which is left should be filled with dummies.

THE LATERAL PLAN.

Another correspondent wishes me to tell in GLEANINGS whether he can use wide frames on the lateral plan, "in the Heddon (old style) case, or the Lewis section-holder." Single-tier wide frames, as I use them, are not adapted to cases of any kind. They can be used right on top of any hive, by placing a wide board over them to shed the rain, but I much prefer what is termed a "cap," or "half-story cover," over them. In this way they can be used nicely, but they are especially adapted to chaff hives while using on the lateral plan, or to using on such hives as are placed in large packing-boxes, as is recommended in Hutchinson's book on comb honey. In these there is no limit to the spreading-out of wide frames on the lateral plan; while any one using common reason can see that such wide frames can not be used with any satisfaction in any of the case or super systems now before the public.

TEMPERATURE OF BEE-CAVES.

It would seem by the editor's comments at the foot of my article, that I have not fully made myself understood on all points regarding my bee cellar, or cave. As soon as the bees are out of the cellar in the spring, the doors are all opened wide, as well as all ventilators, in which shape it is left all summer, so as to thoroughly dry out what moisture the walls and earth overhead have absorbed during the winter. This, of course, causes the air inside the cellar to become nearly the same as it is outside. Occasionally I put in some boxes of bees,

when forming nuclei by the "caged bees" plan, which I have given in GLEANINGS during years past, when, if the doors are kept closed for two or three days, the temperature goes down to about 60° in July and August. As winter draws near (with the doors wide open), the ground cools off till I have the temperature inside, after the bees are put in, as spoken of in my last. Friend Root seems to be bound to compare these bee-caves with deep caverns in Kentucky and elsewhere, that go hundreds, if not thousands of feet, into the earth. While we call our winter repositories caves, yet if any one will turn to the description which I gave last year of mine, it will be seen that the surface of the roof, together with the sides above the surface of the earth around it, is nearly as great as the sides and bottom which are under ground, properly speaking, thus causing the mean temperature between the warm earth beneath and the cold air above to range from 43° to 46°, as I gave in my last.

Borodino, N. Y., Jan. 25, 1889. G. M. DOOLITTLE.

Prof. Cook experimented quite fully in the matter of giving bees water when kept in cellars, and I believe his decision was that, although bees will take water, and it seems to quiet them for the time, under certain circumstances, the result in the spring shows that colonies supplied with water are not only no better off, but, as a general thing, not as well off. They are more likely to die from dysentery than those that do not have water.—All right, old friend. No doubt I have got natural caves on the brain a little; but I have succeeded in bringing out the point I wanted; namely, that you managed to have your bee-cave quite a little colder than the average temperature of the earth below the frost-line; and this low temperature was secured by letting the severe weather outside affect the cellar to a certain extent in the manner you explain.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

GARDENING IN FEBRUARY, ETC.; HOW MUCH OF IT CAN WE DO PROFITABLY?

WELL, we can do a good deal. The sun is a good deal higher up, and consequently comes down with much more heat when it shines. If you want to see how rapidly the sun travels northward, just make a mark on the floor (that is, if you have got a south window that the sun shines through so as to strike the floor) where the shade of the top of the window falls. On this mark, write the date. Next day the sun shines, look again and see where the shadow comes. You will be surprised to find that the sun makes a different path every day; and at noontime the marks will be from one to two inches apart, where only a single day intervenes. This is a good study for the children, for it shows them plainly the motion of the earth and of the heavenly bodies.

Your cold-frames, greenhouses, or hot-beds, will now need attention at noon, or the plants may be scorched before you are aware of it. If possible I would have all these structures so you can go inside and consult your thermometer, or, when you get a little used to it, you can tell what tem-

perature the plants need, without a thermometer.

If you are going to raise plants for sale, now is the time to put your Early Jersey Wakefield cabbages into the seed-bed. The cabbage seed and celery seed sown in January should give plants now with the second leaves coming out, and this indicates that they are ready to be transplanted and need more room. During the latter part of February is also the proper time to sow the seed for your early tomato-plants. Every season we have a call for extra-large strong tomato-plants. When we are short, and do not want to spare them all, customers frequently offer a nickel apiece for them, especially when they are set in pots, so the plant can be turned out to show the mat of roots around the ball of earth. Such tomato-plants, at a nickel apiece, will pay tiptop for your time and trouble. Now, if, in addition to this, they are choice expensive varieties, you will probably have a great many customers who will willingly pay a dime apiece for the plants. If the foliage of the tomato itself indicates that it differs from the common kind, this will help call attention to it, and encourage people in wanting just one or two of the "new-fangled kind." Two years ago we sold a good many of the Mikado plants at 10 cents apiece—that is, extra-early and extra-strong plants. A year ago the Dwarf Champion brought a dime each—all we wanted to spare of them, on account of the beautiful dark-green foliage, and the thick stubby appearance of the plant itself. Good strong Ignotum plants will also probably bring 10 cents apiece at retail next May. We have a lot of them planted, and our first planting of Dwarf Champions are already transplanted into little pots. Everybody who sees them says, "Why! aren't they just as cute as can be?" As these little bits of pots now cost only about 1/4 of a cent apiece, we can readily afford to sell plant and all for a nickel. In addition to offering single plants at high prices, you will need a lot of the plant-boxes described in our book, "What to Do." A little later on, these will sell readily for from 20 to 25 cents, box and all, each box containing one dozen plants. *Extra-strong* celery-plants will readily bring twice as much as ordinary plants; and it is a good plan to have some beautiful White Plume plants on hand to show to customers. Somebody will want them about as soon as they can be put outdoors, and it will pay very well to raise them, even if you do not get more than a cent apiece for them.

DANDELIONS UNDER GLASS.

For some years past, in the East, early dandelions for greens have commanded good prices. Here is something in regard to the matter from our friend who originated the Grand Rapids lettuce:

In your article on "Raising Winter Vegetables," I see you do not mention forced dandelions for greens. As my experience with them may be of some use to you, I give it. Early last spring I sowed 1/4 lb. of the broad-leaved dandelion in rows one foot apart. They were cultivated, and thinned the same as salsify; were taken up in November, and

the most of them were trenched the same as celery, so as to be handy to get at any time during the winter. The rest of the roots were planted under the greenhouse benches, 4 inches apart each way, in good soil. Six weeks from planting they are ready for market; are about a foot high, of a light green, and the finest greens I ever saw, retailing here at 20 cts. per lb. I have just planted roots for a second crop.

EUGENE DAVIS.

Grand Rapids, Mich., Jan. 21, 1889.

Friend Davis was kind enough to send us a sample basket of the dandelions. They are not only beautifully white and handsome, but they are delicious when cooked in winter time. Physicians have for years past recommended the use of dandelions in the spring. They are cut off a little below the surface of the ground, so that some of the dandelion root comes along with the plant, and it is the root, I believe, that is claimed to possess medical properties. In selling dandelions you might mention this latter point if you think best.

If you have any turnips that have started to grow before you have got ready to use them, just plant them under the benches, as you do pie-plant and dandelions, and they will make an astonishing growth in a very few days. The yellowish-white tops, resembling the Golden Self-blanching celery a good deal in appearance, will be found, when cooked like asparagus, a most delicious dish.

Rhubarb, or pie-plant, can now be grown under the shed described for celery. Just dig up some roots and bury them in rich dirt, watering them occasionally; and if you have a temperature warm enough for the other plants, you will get delicious stalks of rhubarb. It seems to me the nicest pies I ever tasted were made from rhubarb-stalks grown in the greenhouse. If you have raised benches for your plants, under the benches is the place for the rhubarb.

THE GRAND RAPIDS LETTUCE.

As this is the season of the year when the great bulk of the lettuce will be planted in boxes or under glass, for the spring crop, we take pleasure in copying from the *American Garden* for February the following in regard to the Grand Rapids lettuce:

UPRIGHT LETTUCE IN THE GREENHOUSE.

In December, 1887, my attention was called to the culture of tall or open-head lettuce under glass and in the greenhouse. The subject was of greater interest, as I had heard and therefore assumed that it was impossible to raise the tall kind of lettuce under glass. The seeds used by the originator he calls "Grand Rapids" lettuce, and the plant in growth has the appearance of the Perpetual or the Hanson. It is a light green, upright, wrinkled, soft-head lettuce.

In correspondence with Mr. Eugene Davis, the originator of this lettuce, I was enabled in February last to receive by express from his houses heads weighing three-quarters of a pound each of as nice, tender lettuce as one would wish to see. Through his kindness, also, I had a few seeds of the lettuce sent me. Part of these I planted last March. In May they were set in open ground and made good growth; but from those saved for seed I secured but a few pods of seed last August. I planted the rest of the seed received from Mr. Davis in the spring, and the plants were set in the greenhouse in September. In November they had made a healthy growth, weighed about half a pound each, and were sold at the full price of head lettuce growing in the same house. Mr. Davis states that

this lettuce has been raised in that locality for the past ten years. There are about seventy-five greenhouses, 20x50 feet, in Grand Rapids, devoted to the culture of this lettuce exclusively, the product going east to New York, also to Chicago, Cincinnati, and Cleveland, shipped in paper-lined barrels, and sold by the pound at about 19 cents net. The selling by the pound pleases both buyer and seller. The average weight is about three-quarters of a pound to the head, some heads weighing 1½ pounds. The business is remunerative in those markets that receive a tall lettuce. Of course, where a head lettuce is demanded this would not sell.

The houses face the south, running east and west; the front is 3 feet high; the front rafters are 16 feet long, rising beyond the center to the ridge, the highest point, which is 10 feet above the house floor; the back rafters are 8 feet long, resting on a wall 6 feet high on the north side. The width of the houses is 20 feet and the length 50, 60, or 100 feet; 20x50 is safely heated by brick return flues and a wood fire, burning about eight cords of 4-foot wood, costing \$3 a cord, and between September and May yielding two or three crops of lettuce.

The benches were not solid; the dirt is 7 inches deep on boards resting on wooden supports and posts. The flue runs the whole length of the house, and the chimney is over the furnace; temperature can be maintained easily at 65°; the furnace filled at 9 p. m. will last until morning, and is kept going all day in the coldest weather. The 100-foot-long houses have a furnace at each end, 50 feet in length, being all one fire can easily heat.

With me the "Grand Rapids" lettuce proves less liable to rot, but less salable than head lettuce in the winter. Mr. Davis says: "It stands shipping better, and is not so liable to rot on the benches. The trouble with head lettuce with us is, if it gets to top rotting you can't stop it; this kind, the heads being more open, you can stop it at once." He also says: "I tried three kinds of head lettuce last winter, and I find it can not be sold by the pound at a profit to the grower; also when head lettuce gets its growth it must be sold at once; grown by the side of Grand Rapids lettuce it rotted and was not reliable. All who are trying the business here are making a success of it. This lettuce will grow as well in hot-beds as in hot-houses. In regard to weight, profit, etc., I have just finished (March 6, 1888) cutting one house, 20x60, and got 1400 pounds, which nets us 19 cents per pound. It gives better satisfaction sold by the pound. In a good season this lettuce is a heavy seeder. The past season my crop was very light, on account of dry weather."

Mr. Davis is a young man, probably thirty-seven years old, who has devoted sixteen years of study and experiment to the improvement of lettuce, with a view of growing it under glass. He started with the Black-seeded Simpson. He wanted lettuce that would not rot, of rapid growth, light-colored, handsome in appearance, crisp, tender, excellent in flavor, and that could be kept ten days or more without hurting, when ready for market, should the weather be unfavorable for shipping or the market dull. During this time the stock has not got into the hands of seedsmen.

In January, 1888, Mr. A. I. Root, of Medina, Ohio, paid \$50 for half a pound of seed, which is the only case of sale outside of Grand Rapids, where Mr. Davis supplies the seed to all who are in the business in that section. He says he has no seed for sale this year, but could have another season. His experiments have been conducted in his own interest, and not with a view to sell seeds or plants; but the subject is of sufficient importance to warrant continued investigation on the part of those engaged in raising lettuce under glass. I have no personal interests to serve in speaking of the subject. Mr. Davis has, by constant selection and improvement, succeeded in keeping the stock up to its present capabilities, from which it would speedily decline in the hands of a careless operator.

Hampden Co., Mass.

W. H. BULL.

MORE ABOUT THE GRAND RAPIDS LETTUCE; HOW TO CONSTRUCT A GREENHOUSE FOR LETTUCE; HOW TO WARM IT, ETC.

Friend Root:—In your issue for Feb. 1, 1889, Mr. Eugene Davis, of Grand Rapids, in answer to your fourth question, as to best mode of heating lettuce-houses, says: "Our houses are heated with flues running under the middle bench, constructed so as

to give as even a temperature as possible." Can you inform me how his furnace and flue is constructed, in order that it may give this even temperature all over the whole length of the house, the houses being 16 feet wide and 50 feet long?

Aldersholt, Ont., Can. ROY M. BLESSINGER.

We at once forwarded the above inquiry to friend Davis, who replies below:

Mr. Root:—The furnace and flue that gives the most even temperature in my greenhouses is made as follows: A pit is dug, 4 ft. deep and 4 ft. wide and 9 feet long. The furnace is 5 ft. long, 22 inches wide and 30 inches high to the top of the arch, inside measure; the walls are 8 inches thick and 24 inches high, arched over with two tiers of brick. This leaves the top of the furnace about 15 inches below the surface; 18 inches of furnace should be built in the shed, for the chimney to rest on. The furnace-door is 16 by 20 inches, with draft in the door. The flues are four brick high, laid flat, and seven inches wide inside, with double tier of brick on top, 20 feet from the furnace. The brick is laid flat, 40 ft. from the furnace; then with 9-inch sewer-tile to chimney, or brick set edgewise, 3 brick high. There should be a gradual rise in the flue from the furnace to the chimney. When firing with *green wood*, never close the drafts, as the gas from the wood will kill the plants.

The chimney is on top of the furnace. The reason for it is this: As soon as a fire is started in the furnace, the air is heated in the chimney, and gives a direct draft. There are no grates in the furnace. In the first one I built I used them; but I saw the draft was good enough without. Any one handy with a trowel can build the flues, furnace, and plaster the cistern.

I am afraid these directions are not very plain; but my hand is more used to a shovel or hoe than to a pen.

EUGENE DAVIS.

Grand Rapids, Mich., Jan. 25, 1889.

The article from the *American Garden*, it will be noticed, has also considerable to say about the construction of greenhouses for lettuce. Friend Davis sends us, also, some diagrams, but I think they will not be needed with the full explanation which has just been given.

BOXES FOR PROTECTING MELONS FROM FROST, ETC.

I wish to use, the coming season, quite a number of the boxes over my melons in the early spring, such as you wrote about having made for the purpose of protecting squash and cucumbers from frost, etc. My object is to protect my melons from frost, so that I can force them very early. We had a killing frost last spring after melons had been up three weeks. This is what I wish to avoid in future. Please answer the following questions; and if you can not give answers from experience, then give me your opinion about the matter.

1. Would not a box smaller than the one 8 by 10 do as well (say one taking a glass 6 x 6 inches), where one or two plants are in a hill?

2. Would it be good economy to use half as many boxes as hills, transplanting to the other or open hills from the boxes? One plant is all that is desired in each hill after thinning out the last time. We plant cantaloupes 7 to 8 ft. apart, and watermelons 9 to 10 ft. each way.

ALBERT WITTENMYER.

Emison, Ind., Dec. 27, 1888.

Friend W., the only trouble with your *small* boxes would be that the frost would, as you will readily perceive, be more likely to freeze the ground solid clear through under them. This could be avoided, however, by banking up the earth on the outside, when the freezing is severe. With our tin transplanting-tubes, you can transplant melon-vines without the least risk, and rarely with any check in their growth. Another trouble with your small boxes would be that the vine would be very soon too large to be protected by it. This, however, does not as often happen with *boxes* as with the wire-cloth *baskets* for protecting them from the bugs. See what we said in regard to the matter on page 544, in GLEANINGS for 1888. My experience last season was not very favorable with the boxes for protecting plants from the frost. The *protection* is complete, and I saved my vines; but the discouraging feature about it was this: Seeds planted several weeks later, side by side with those that had been protected with so much pains, give melons and cucumbers almost as soon as the ones that had been started so early. I am inclined to think, however, that seasons as they usually come would give a different result. The same is true with tomatoes protected by the plant-boxes from the frost. We had so much wet weather, however, last season, that all kinds of vines kept growing, and did not commence to fruit as early as they do when we have more dry weather; that is, careful protection from frost resulted only in giving me *immense* plants; but they did not bear fruit any sooner than the *small* plants that had grown a much shorter time. We are going to get early tomatoes this year by planting them on *poor soil*; and I think if we could have kept off some of the extra amount of rain we had last year, from our melon-vines, we should have had *earlier melons*.

HENDERSON'S BUSH LIMA BEANS IN THEIR NATIVE STATE.

I see you have the bush lima bean illustrated, and I have read what you and others have said about it. We have had this bean with us two years, and perhaps longer. I planted a very few the past year, and gave them but little attention. Had I only known they would have been in such demand, I might have planted a quantity, and now been able to supply you and others.

J. W. HUDSON.

Maysville, S. C., Feb. 5, 1888.

Well done, friend H. I had a dim idea that perhaps GLEANINGS might be able to find out where these bush lima beans came from, for it makes its way into more nooks and corners than one might imagine, with a circulation of less than 9000. A great deal is due to the fact that it has a keen and enterprising set of readers, and a thing must be pretty difficult indeed if there is not one of them somewhere who gets hold of it. Now, don't you think that, if you "flax around lively," you can get hold of some of those beans somewhere in your vicinity? You need not tell anybody, but I will just whisper in your ear, they are worth about a cent apiece, even if they are small. And now, friend H., we want your private opinion publicly expressed, in regard to the

quality, compared with the big lima beans. And another thing, is it not a little tedious to gather and shell them, compared with shelling our great big ones—the “King of the Garden” limas, for instance? Who is there in your State or vicinity who can tell us more about the bush lima bean?

While I think of it, I want to complain a little of our good friend Peter Henderson. In all the glowing accounts we have had of these new lima beans, there is almost nothing said about their being so exceedingly small. When I opened my first package I was a good deal disgusted, and that is why I took particular pains to tell the readers of GLEANINGS what they might expect in the way of size before we sent out any of them. I know the temptation is strong to say all the good things we can about novelties, and to skip over the unpleasant part; but if a seedsman wants to keep the confidence of his patrons he will not only tell nothing but the truth, but he will tell the *whole* truth. Again, in Henderson's new catalogue quite a glowing account is given of a tomato called the Shah; but we learn that this is only a Mikado that is yellow instead of red. The first Mikados we ever got of Henderson gave us a few plants producing the yellow tomatoes; and for three years in succession we have noticed the same thing—occasionally a plant producing Mikados that were yellow; but as most of our patrons preferred the red tomato to the yellow one, we rejected them in saving tomatoes for seed, as being objectionable. Under the circumstances, is it right to bring this out as a variety? Nothing is said in the advertisement as to its being any more regular or any smoother than the Mikado. That being the case, I do not see how it can compare with the Golden Queen, which has for some years been before the people as a good-sized beautifully shaped yellow tomato.

Later.—In Landreth's new catalogue just received, we find a photograph of what he calls “Dwarf Carolina, or small lima beans.” The photograph shows a single stalk bearing an immense quantity of pods that look exactly like the pods represented by Henderson; and a package of the beans placed side by side of a package of Henderson's bush lima beans looks so exactly like them, that no one can tell the difference. Landreth charges 10 cents for a package of 25 beans, while Henderson charges 25 cents for the same. Henderson says his came from the South, and our correspondent from South Carolina says they have had them there for two years, and Landreth calls them Dwarf Carolina; so it seems pretty clear that it is one and the same thing. Landreth, however, does not herald them with any spread-eagle advertisement. Of course, we can tell *positively* that they are the same thing only after raising a crop of each. We can mail Landreth's at 10 cts. per packet, or Henderson's at 25 cts.

HOW TO RAISE SWEET-POTATO PLANTS.

I wish you would give some directions how to raise sweet-potato plants, as I am in the gardening business as well as the bee business.

Hastings, Neb., Feb. 1, 1889.

D. J. RADDICK.

Friend R., we have succeeded in getting a fine lot of sweet-potato-plants only once; then we cut the potatoes in two and turned them cut side down, and placed them in a warm spot in our greenhouse. They were very slow about starting, but we finally succeeded in getting some very nice plants. When they became crowded, and we didn't have customers, we pulled off the sprouts, or plants, and set them out exactly as we do celery and cabbage plants in our plant-garden, and they made strong thrifty plants about the time customers came for them. Such plants that have been transplanted so as to give them a good root, and make them strong and stocky, are certainly worth double the price of ordinary sweet-potato plants. If some of our readers are in the sweet-potato-plant business, and will give us a full account of how plants are raised for the garden, on a large scale, we will gladly pay them for the paper. Last season there was a scarcity, and we failed to get plants to fill orders, even though we telegraphed to many different points. Saving sweet potatoes so as to be in good trim by planting time, I believe is one of the most difficult points, especially here in the North; and if somebody who has nice potatoes suitable for plant-raising will advertise them in GLEANINGS, I think he would meet with abundant sales.

HOT-BEDS—HOW TO MAKE, ETC.

I should like some information on hot-beds, how and when to make them, and whether to use glass or oil cloth for frames. I want to sow my seeds about Feb. 15.

H. WHITE.

Spencer, O., Jan. 14, 1889.

Directions for making hot-beds have been given so frequently in most of our seed catalogues that it seems a good deal like repetition. The whole matter is very simple: My father-in-law used to make a very nice hot-bed on top of a smoking manure-heap. All he did was to dig down until he found the manure hot enough, then he put on three or four inches of good garden soil, set a box over it, and placed on top of the box a sash, banking the manure up around the box, clear up to the sash. He raised as fine plants as any I ever saw, by this means. Now, a hot-bed is nothing more than putting this manure into a square pit dug in the ground. They go into the ground to be more secure from frost, and to save the heat from the manure. The pit must be well drained, so that heavy rains will not drown every thing with ice water. Cloth is not as good as glass. In fact, it would not answer at all at a season of the year when we are liable to have heavy snowstorms. It is true, there is no danger of the plants being scorched by what sun gets through the cloth; and at a season when you simply wish to protect your plants from an occasional frost at night, the cloth answers every purpose. But the cheapest kind of common sheeting that we get at our dry-goods stores is every bit as good as the hot-bed cloth that has been advertised so much; in fact, we prefer the cheap cotton cloth from the stores. It is not so easily torn into shreds. Another trouble with cloth is,

the havoc that high winds make with the frames. We have chased after them so much, and wasted so much time in fastening them down, that we have about concluded the glass sash is cheaper in the end.

CORN SALAD.

You gave in GLEANINGS so excellent a plan for raising lettuce, would you not have the kindness to give advice for growing in cold-frames corn salad (fetticus, or lamb's lettuce), through GLEANINGS? It is much esteemed in the old country, but it needs there no planting, as it grows in all corn-fields spontaneously, and stands any weather and winter. It is there called "corn."

Sigel, Ill., Jan. 27, 1889.

DR. WM. HEER.

Friend A., we have some very fine corn salad now growing in one of our cold green-houses. We have raised it and sold it to some extent here in Medina. I believe, however, that but few people have learned to use it, except the Germans. We are very much obliged to you for the additional facts you give us, and we should be glad to be told more about it.

JAPANESE BUCKWHEAT; LIMA BEANS WITHOUT POLES, KAFFIR CORN FOR HOT-CAKES.

Here is my testimony regarding Japanese buckwheat: I sowed about a peck, and got 17 bushels. The seed came from Peter Henderson. We never saw a single bee at work on the blossoms, except the little wild "sweat" bees. The flour is equal to any buckwheat, and we sold it at 4 cts. per lb., but at the same price we sold 2 lbs. of the Kaffir-corn flour to one of buckwheat, and used the latter in our own family, most of the time. The garden talk found in your paper is very refreshing to me. The Henderson bush lima has caught the attention of gardeners; and if it did not look so small I would take more stock in it. Let me tell how I raise Jersey lima beans without poles. I run a fence, made of wires and lath, which can be had at 40 cts. per rod (3 strands and plastering lath), right where the row of limas is to stand. Plant the beans 6 inches apart, on the south side of the fence; and if they come up at all right, your row of limas will be the wonder of the neighborhood in September. I have picked a bushel of pods in two rods of fence.

Crete, Neb., Feb. 5, 1889.

M. S. BENEDICT.

The fact that you saw no bees on the blossoms, I do not think at all against the Japanese for honey, for many such reports have been made from common buckwheat. There are two causes that bring this about: First, the buckwheat may contain no honey, just as many other kinds of blossoms may contain no honey during certain seasons. Second, the bees may have found something else so much more to their liking that they would not notice the buckwheat. Sometimes, when this pasturage fails, they will start for the buckwheat with a sudden rush.—We have tasted the Kaffir-corn flour, for making cakes, in place of buckwheat, but we rather give the buckwheat the preference. The Kaffir corn, however, makes a very nice light cake.

WANTED, A SCHOOL FOR TEACHING GARDENING AND AGRICULTURE.

Dear Friend:—I received and read your book, How to Be Happy, with pleasure. It held my attention, though I know nothing about gardening. I

have taken a great notion for farm life, and I should like to know if you know of any schools teaching farm methods, dairying, fruit-tending, etc.—things you can not learn from books. I know there are State agricultural schools, and I have read of experimental and college farms, but nothing further.

MARY L. BONNER.

Davenport, Iowa, Jan. 17, 1889.

My good friend, our agricultural colleges, I think, will fill the bill exactly. The one at Lansing, Mich., has attained a world-wide celebrity; and the Experimental Station at Columbus, O., is beginning to become one of the institutions of which our State may well be proud. We should think that your own station in Iowa, where Prof. Chamberlain presides, who, by the way, has only recently left Ohio, would furnish all the advantages you wish.

FRIEND MARCH'S CABBAGE AND CAULIFLOWER SEED—REPORTS THEREFROM.

As far as my test is concerned, I can say I think they are extra. I put out nearly a hundred cauliflower-plants, and they all headed to a plant.

Wilsonville, Norfolk Co., Ont. ISAAC LUNDY.

From a five-cent packet of March's Select Very Early Jersey Wakefield cabbage seed bought of you last spring we got 431 nice strong plants; and after six kinds of bugs had satisfied their appetites, we got about 400 of the nicest cabbages I ever saw. We have just received a trial package of Ignotum tomato seed, containing 26½ seeds, which we are going to plant in our little greenhouse, right off this minute.

B. L. SAGE.

New Haven, Conn., Jan. 24, 1889.

March's Jersey Wakefield cabbage seed, of which I bought of you one five-cent paper, gave me 340 strong, healthy plants. After I set them in the open ground the cut-worms proved to be very bad; and although I went over the patch every morning for a month, and caught from a dozen to 75 cut-worms a day, they destroyed half the plants; but all that were left made beautiful large and solid heads.

S. L. SHERMAN.

Oskaloosa, Ia., Jan. 9, 1889.

THE ONE-PIECE SECTIONS.

SUGGESTIONS IN REGARD TO THEIR BREAKING, ETC.

FRIEND ROOT:—My article in GLEANINGS, on "Folding Sections," brought me quite a number of letters and samples from different manufacturers. From these letters I deduct the following: 1. Sections made from old basswood are more liable to break than those made from young wood (second growth). 2. Kiln-drying destroys the elasticity of the wood, and makes it brittle, while air-drying does not have that effect.

3. The grooving-saws should not be too sharp-pointed on the edge, but rather a little rounding, so as to leave more wood in the bottom of the V-groove than is done by a sharp-pointed saw.

I am going to try sliced sections this year as their folding quality and rigidity after folding seems to be much superior, although in appearance they are not as "pretty" as sawed and sandpapered sections.

A PROPOSED SHIPPING-CASE.

I have in my mind's eye a (any) shipping-case for comb honey, with four little india-rubber balls, one under each corner. The balls should be solid, but with a hole through the center, just large enough to take a 2-inch wire nail. I suppose $\frac{3}{4}$ or 1 inch in diameter would be a good size for the balls. The wire nail should be "set in" so that the head would go to the center of the ball, and thus not interfere with its elasticity. I imagine that a case provided with 4 such balls under its corners would stand considerable bumping before the combs would break loose. What do you think of it? Would it be worth while—for you—to have them manufactured, and keep them for sale? Or would the balls interfere with the piling of cases on top of each other?

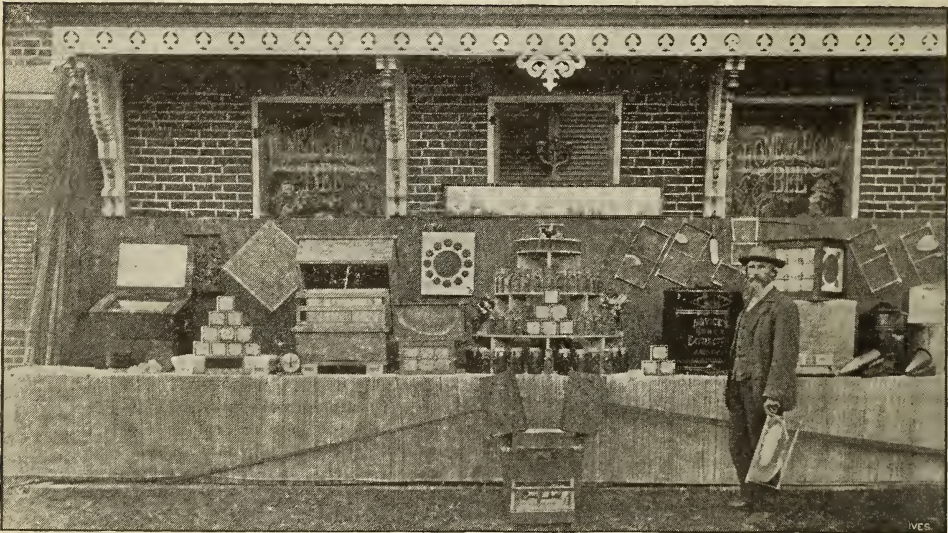
I once heard of a double packing-case with rubber balls between the cases, but I do not know if anybody ever used such. They would be too expensive, at any rate. WM. MUTH-RASMUSSEN.

Independence, Inyo Co., Cal., Jan. 7, 1889.

HONEY-EXHIBIT AT SPRING MILL.

AS ARRANGED BY J. W. NIMAN.

I HAVE taken the liberty to send you a photo of my apiarian exhibit at our county fair. As the name in the picture is something of a novelty, and has been admired by many thousands of people, I thought it might be of interest to the thousands of readers of GLEANINGS. I will here give you a brief description of the picture. At the extreme left is a bee-tent; next is a solar wax-extractor, and adjoining it is a queen-excluding honey-board. A bee-hive with a capacity for 100 one-pound sections is next in order. Thirteen stars of solar-extracted wax, representing the thirteen original States, stand out conspicuously in the background; beneath it is a queen observatory hive. Next is a pyramid of glass jars of different sizes; above it, a glass case five feet long; in it the name of your humble servant, made by the bees, as you see there in the picture, and over five feet in length.



J. W. NIMAN'S HONEY-EXHIBIT, SPRING MILL, OHIO.

I believe you are right, friend M., on all the three points you make. The rubber balls have been suggested, and used to some extent, not only for honey, but for shipping eggs for hatching. The trouble is with honey, that, where one has 100 cases or more, it would not be practicable to have them all set on these rubber balls. Where one has a good crop of honey, he had better load it on the cars himself if possible. Put a good layer of straw under the cases, and pile them up one on top of the other. Pack straw between the cases, at the side of the car; then if you can have some careful man to attend to unloading them, they can be shipped by freight without injury. If it be necessary to transfer from one road to another, then comes in a difficulty that can be obviated only, perhaps, by securing the whole car, if the crop warrants, thus having it shipped to its destination without transferring.

A Novice honey-extractor is at my right. In my hand is a Langstroth brood-frame of new comb partly capped over. At my back is a large case of honey and wax, and near them are bee-smokers. Back of the Clark smoker you can see a corner of an old box hive, with brimstone matches sticking in it, such as were used in old times to kill the bees to get their honey. On the ground in front is the apiary tool-box and swarm-arresters on the top of it.

J. W. NIMAN.

Spring Mill, Ohio, Oct. 10, 1888.

Friend N., your exhibit does you great credit. Your name, built out in honey-comb by the bees, must have proved quite a curiosity to the many visitors. Those little bits of comb built in the frames, showing how the bees start their work, not only exhibit the beauty of workmanship on the part of the bees, but it teaches people how comb is built, and the way in which bees go about it.

THE TARANTULA.

PROF. COOK ADMITS THAT SPIDERS MAY BITE.

MISS FLORENCE GREEN, Welde, Col., writes me as follows: "I send you a specimen of tarantula—not a very good one, but I hope you will tell us all about it in GLEANINGS, especially whether it is poisonous or not. The people here say that it is. We take great pleasure in reading the articles on insects, and we shall be much pleased if you will notice this."



THE TARANTULA.

This is one of the largest of American spiders, and is found from California to Missouri, and south into Texas. I send a good drawing of the specimen, so that all may see just what manner of creature it is. The scientific name is *Mygale Hentzi*. It is brown, and the drawing gives the correct size. As will be seen, it, like all spiders, differs from an insect in having only two parts to the body—the cephalo-thorax—head-thorax—which bears the mouth organs, eyes, and legs, and the abdomen. Thus the head and thorax, instead of being separate, as they are in insects, are united. They have no antennæ and no compound eyes, but eight simple eyes arranged in two rows, as seen in the figure. There are eight legs instead of six, as in insects. Those front leg-like appendages, which bear the curious claw-like organ, are not feet, but the maxillary palpi, and so belong to the mouth organs.

These are ground-spiders, and live in holes dug in the earth. As to whether these are very poisonous, or dangerously poisonous, I am not able to say. All spiders have fang-like jaws and poison-glands, with attached poison-sacs, and so can extrude poison with their bites; but our smaller spiders can not bite very severely, and the poison is too scant to do harm. I never hesitate to pick up a spider, and never could get one to bite me so as to hurt, much less poison me. Of course, such a Jumbo of a spider as the tarantula would frighten most people, and we can readily see how terrible stories might arise, solely as the product of fear and imagination. If the tarantula were a Michigan spider I should try it, possibly with gloved hands at first, and I should not be surprised if I should find that I could handle this as safely as our common and smaller spiders. Where it costs nothing, it is always best to be cautious, so I advise Florence not to handle the tarantula till she proves that it can not or will not bite. A. J. COOK.

Agricultural College, Mich.

Friend C., you say these spiders live in holes dug in the earth. That may be true;

but you do not give our readers any conception of what beautiful silken-lined holes these are where the tarantulas live. More than that, they have one of the prettiest little doors, hinged as daintily as the lid to a jewel-casket, and the spider can shut the door in the face of his visitors if he choose. When on my brother's farm, one of the little boys brought me a nest to bring home; but in some way it was forgotten. The silken gallery is a sort of tube, with sufficient tenacity so it can be handled without danger of breakage.

AN A B C SCHOLAR 62 YEARS OLD.

HOW SHE FINALLY TRIUMPHED OVER DIFFICULTIES AND DISAPPOINTMENTS, AND CAME OUT VICTORIOUS.

MR. ROOT, DEAR FRIEND:—We consider you as such, and your name has become a household word. I have been wanting to write you, to ask that you would continue GLEANINGS, although we can not send you the money quite yet, owing to sickness in my family. My husband has been out of health the past year. He has bronchial asthma, and has not been able to do any thing for many months. I had a hard time the past fall, getting my bees ready for winter, not being strong myself. I had about 80 colonies. I sold 10, and doubled until I now have 56, all strong and in good condition for winter in Root chaff hives (all but seven). I commenced the season with 50 colonies. It has been a very poor season in this part of the country. I got only about one-fourth of a crop, and that not nearly as good as in a good season, both extracted and comb honey.

Mr. Root, I have wanted to tell you that I owe you all the credit for my success, as I did not know any thing, scarcely, about bees when I commenced. I saw a few old copies of GLEANINGS at a friend's house while on a visit, which gave me a great desire to possess a colony of bees. We were poor, and in debt. I thought I could learn to care for them, and may be it would be a help. My husband had no faith in the idea, so he put me off; but finally, after much persuasion he purchased a light colony in an old box hive in the early spring. They did not cost much, as they were not worth much, for they swarmed out and went off. I did not know that they could be fed. I felt so bad about losing my bees that my husband then bought a good colony. I was so delighted I gave them every attention I could. They swarmed five times. I put them in the American hive, as it was in use here at that time. I was much elated with my success, and I thought I was going to show my husband that I could take care of bees. But I did not dare to open the hives; so when winter came they all died, of course, as the old colony had swarmed itself to death. I was sorely tried, but I had no idea of giving up—I had grown wiser. I learned of the A B C book. I sent for that and GLEANINGS, and went to studying. The next spring, 1880, I had an opportunity of taking three colonies on shares. I had all the increase and one-fourth the honey. Since then I have wintered with very small loss—some winters none. I now have 50 chaff hives; and as I thought that number was about all I had strength to care for with all my domestic duties, I have tried hard to keep them down to about that, by selling some

and doubling up in the fall. I have succeeded nobly in doing so, although I have had between 70 and 80 colonies several times. My husband is no bee-man, and does not like the business. Since I commenced I have taken between 13,000 and 14,000 lbs. of honey, over one-half extracted. It sells here now for 15 cents, comb; 12½ extracted. Those troublesome debts are paid, and we have built us a good new house, which we much needed, and my husband gives the "blessed bees" credit for most of it. My husband and son did the work. I am almost 62 years old. If I were younger I would try to care for a larger apiary, as I do not lose my enthusiasm for the care of bees. My health is not good, but much better than it used to be before I worked in the apiary—so much that I feel as though I wanted to thank you for the biographical sketches you sent out with GLEANINGS. I am very much interested in them, but most of all in the one that appeared in GLEANINGS for Dec. 15. I can not tell you how much we prize GLEANINGS. I shall take that as long as I have anything to pay for it, while I live.

I have wished many times I had Our Homes in binding of some kind. I mean ever since they were commenced. I have wondered if you had them.

I feel to praise God every day of my life for his goodness to me, and for all the way in which he has led me, and for the success he has given me in my labors; for it has come through much prayer and humble trust in him that I have been able to accomplish the desire of my heart in getting an apiary established on a small scale, and it is a cherished desire yet to be able to do a little more in helping on the blessed cause of Christ in the world. I am especially interested in the American Missionary Association. Oh how I do want to help more in that direction!

I am almost frightened when I see how much I am trespassing on your precious time, but I will promise not to do so again. You seem so much like an old friend that I almost forget myself.

We get our supplies at Jamestown, as the freight is much less. I was sorry to change.

Farmers' Valley, Pa., Jan. 8, 1889. MRS. E. C. OLDS.

By all means call me "dear friend," if you feel like it, *my* dear friend. I can not tell you how much it rejoices my heart to know that you have ultimately triumphed in conquering the intricate and perplexing minutiae of bee-keeping. I am really afraid that, had you asked my advice, about the time of your repeated disasters, I should have urged you to give up the business, and not try any more, a good deal as your husband probably did. In fact, I should have thought it almost impossible that one so well advanced in years as yourself could conquer the difficulties that every beginner must meet. However, you have given us a grand illustration of what may be done by one who has a steady enthusiasm for any such industry, right along, year after year. You loved bee culture, and did not tire of it, even though beset with repeated disasters, and therefore you conquered. The point you make, where the debts were paid and the new house built, is not only refreshing, but it is a good rebuke to those who say after they have got old, and let their bees go to ruin through *lack of attention*, that "bee-keeping does not pay." I think your hus-

band and son must be exceedingly good-natured to follow your directions when they have no particular interest in the matter. Another encouraging thing, like our good friend Mrs. Axtell you have found your health improved, as well as your pocket-book; and the improvement came, too, without the use of medicines of any kind. Now, any outdoor industry that gives us renewed health, without the aid of medicine of any sort whatever, is a grand gift from God, even if we do not make any money by it at all. When it pays the debts and builds houses besides, it amounts to one of the grandest gifts that ever came from the hand of the all-wise Creator. No doubt your heart was stirred within you by the accounts of Mrs. Axtell's great achievement with honey-bees, for we notice that you too are interested in missions. Never mind about trespassing on my time, dear friends, when you have such a story to tell as we have just had in the above. You see, I have taken the liberty of putting in even your last paragraph also; and I will tell you why I did it. I want to say to you, and to all others of the friends who read GLEANINGS, that, whenever you can buy your supplies nearer home, so as to be the means of saving you freight, or in any other way, remember it does me good to hear of it, even if your money does go into the pocket of some other brother; for I hope I have grace enough in my heart to wish to have you all do what benefits you most. If the money did come to us here at the Home of the Honey-bees, it wouldn't go to our good brother at Jamestown; and I am not sure but it affords me just as much pleasure to think *he* has been receiving good-sized orders, as if they came right here to us.

JOTTINGS FROM AMATEUR EXPERT.

ENGLISH BEE-KEEPERS; CARNIOLANS AND OTHER RACES OF BEES.

FRIEND ERNEST:—Your letter of Dec. 6th is before me. So you have foraged out my name and address from friend Blow, and now wish to make use of me. I thank you for offering to put me on your list of paid contributors; that, I must decline. I never write for "grit," but for amusement; moreover, my experience with editors is that they are an arbitrary class of men, so I keep free of them; and if they do not treat me as I think I ought to be treated, I am then in a position to throw up the pen and make my bow. I shall, however, be pleased to include GLEANINGS among my friends, as I always read it with very great pleasure, and it is my wife's first favorite among bee-papers.

You suggest a host of subjects for me to give my views about, naming Carniolan bees first. A very innocent remark of mine in the *B. B. J.* raised an awful "storm in a teapot" about these bees; and when it came to high words it was brought to an abrupt end by the veto of the editor. For myself, I was not sorry; but for people who are likely to be eased of their money in the future as in the past, I was very sorry. There are immense numbers of queens imported into England every year; and in my wanderings about I see great numbers of vari-

ous races. The trouble is, they are so very much mixed. It matters little what race you select, the trouble is to depend on getting them pure. Carniolans are the last foreign race in great demand—if I except the Minorcan—and most of us had hoped an effort would be made by the queen-breeders to keep them pure; but it soon became evident to those who watched what was going on, with a critical eye, that the same old game had reached Carniola also. I do not wish to blame any one man for doing this, but I at least did expect some to endeavor to keep their hands clean of such practices by keeping the yellow races out of the breeding-grounds, instead of introducing stocks in numbers to breed from.

I presume you are not aware that our law of libel in England makes it a crime to write and publish the truth, if it is calculated to injure a man in his business. Dishonesty with us, as everywhere else, does not succeed in the end; but we have not the ready means of showing up any "fishy" tricks that you have in America, as the parties would soon down upon us and get heavy damages; consequently one has to be very cautious, and so have editors.

Now as to the Carniolan bees. Why are they such favorites with us? To understand the reason, you must understand the class of people who compose a large number of our bee-keepers. First, we have the farm laborers, who keep bees in the old-fashioned straw-skep hive. They are very numerous in the parish (township, an area of 4000 acres) in which I reside; there are quite 40 who keep from two up to a dozen such stocks each. They never buy a fresh queen or swarm, but simply hive whatever increase comes naturally, and take the swarms in autumn, and return the bees (or in some cases even brimstone them), and appropriate what honey they may have stored, and allow the old stocks to stand over winter. The only good thing about this method is, they have always young queens at the head of their colonies.

Next we have a class of people socially a stage above these, who keep bees in bar-frame hives on modern methods and read the bee-papers, and keep the bees for what they can get out of them, as well as a relaxation from other labors. In my parish I have two other such besides myself, but the three of us would not keep 50 stocks between us, as we can not find time from other duties to attend to more, and I keep the greater portion of that number, the other two not being such lovers of it as myself.

We next have a class of people who keep bees for pleasure and profit, who enjoy moderate incomes, who keep a daughter of the laboring classes in their houses to do the work as a "slavey," and a lad out of doors to do the pleasure-ground and garden, clean boots, and do odd jobs generally. As a rule, these people live fully up to their incomes, are very poor and very proud. Indoors the wife would not wash a cup or light a fire on any account, while out of doors the master would not hoe a weed in his garden, or run a lawn-mower, for a fortune, if he thought his neighbors would see him. These people keep poultry for the sake of the eggs they lay, as well as to have something to interest themselves in outside of their duties. They also keep bees for a similar purpose. These are the people who use the bee dresses and gloves, etc., that form a part of bee-gear with us, and a real

good stinging from a fiery-tempered stock of hybrids would really be serious to such people, as well as inconvenient. I remember meeting one such one day who offered to sell his five colonies in bar-frame hives cheap, to be rid of them quickly. He was dreadfully disfigured; and on my inquiring why he wished to sell them he replied he could not bear to walk up the street, as every one he met "chaffed" him so—"What! been out late?"

Having said so much about our social habits, and bearing in mind the fact that Carniolans are remarkably docile bees, you will readily understand why they are such favorites with this class of people. As honey-gatherers they are as good as many sold here for Italians; they are also better comb-builders, as a rule, and they certainly are far more reliable in temper.

Our farmers, with extremely rare exceptions, do not keep bees, nor do their sons, daughters, or wives, seem to take to it. This with you is the contrary, I believe. Many of us are compelled to keep our bees very near our houses and pleasure-grounds, consequently their tempers often have to be a great consideration with us. The characteristics of Italians, Cyprians, and Syrians, that you inquire about, I must leave to a future letter. This is "Boxing-day" with us, and consequently a general holiday spent in feasting and idleness, so I am spending it by putting up arrears of correspondence. December has been a month of mild, damp, foggy weather. The air is saturated with moisture; and in places where there are no fires you can wipe the moisture off painted woodwork and such like articles, so you may imagine what the hives are like on their summer stands. AMATEUR EXPERT.

Friend E., although your letter was directed to Ernest, I want to express to you my thanks for your kind letter to our readers. I am very glad indeed that you have taken hold of this matter of false pride in regard to doing necessary household duties, and that you have handled it without gloves. Although there are not very many in our country, so far as my knowledge extends, who are ashamed to wash the dishes, light the fire, weed garden, or run a lawn-mower, there is a constant tendency here in that direction—that is, there are certain people who are ashamed to be found doing these things. I suppose that you are well aware that I have been strongly opposed to any such romantic notions. A great many times, when well-dressed runners inquire for the "boss" they are surprised, and may be now and then disgusted, to find him not as well dressed as some of his workmen, and perhaps engaged in "weeding garden," as you express it. There may be such a thing, however, as too great extremes in this matter. My wife thinks many times I ought to take more pains to be tidy and neat than I do. Doubtless she is right; but she prefers to do her own housework; and when you pay us a visit, which I hope you sooner or later may do, very likely she will light the fire and cook the breakfast for us with her own hands. I often tell my helpers that I shall never ask them to do any thing that I should be ashamed to do myself, and I think this contributes greatly to the pleasant relations that exist between myself and all who are working for me.

My wife remembers enough about her childhood home in "Merry England" to give us very graphic accounts of the people, climate, etc., even including the dampness of the winters, which you mention.

NOT QUANTITY BUT QUALITY.

MRS. HARRISON OFFERS SOME GOOD SUGGESTIONS TO PRODUCERS AND SELLERS OF HONEY.

MR. ROOT:—Mrs. Chaddock, in telling what I sold extracted honey for, has caused letters to pour in upon me at a fearful rate, offering honey in barrels by the score. I wish to say to one and all, that I'm not in the commission business. If I wanted honey, I would either advertise for it, or write to those who I knew had it to sell. The reason why I get 20 cents per pound for extracted honey is this: I'm an old resident of this city, having lived here nearly all my life, and am well known. Although there may be plenty of honey at the stores, persons will come long distances to get ours, fearing adulteration, saying, "It's bees' honey I want."

Those who report such large yields of extracted honey, and claim to produce it so cheaply, are an injury to the craft. I always feel as though my extracted honey cost me the most. This cheap way is certainly not the best way. The honey that I'm selling is pure basswood. The combs were entirely empty at the advent of the flow, and extracted before sealing. It was a ground-hog case. We were out of honey. The boy who was digging out a woodchuck on Sunday morning, who was reprimanded by a minister driving by said, "I must have him; we are out of meat, and the minister is coming to our house for dinner to-day."

The honey, as it came from the extractor, ran into jars or tin vessels, which had cheese-cloth tied over the top. When they were full, fresh cheese-cloth was tied on them and placed in the sun. The weather was very hot and dry. It is a mistake to let the honey run from the extractor into barrels, without straining. If this honey were to pass through the hands of that careful and painstaking woman Mrs. Muth, it would come upon the market all right, but it may not be so fortunate. She told me, when I was there, that when she "cooked" honey, as she expressed it, she skimmed it as long as any scum would rise; and on looking at the skimmings with a magnifying-glass, broken legs and wings of bees could be seen.

In lieu of trying to see how much extracted honey can be produced, it would be better to aim at excellence. I do not see how any one can tier up until the close of the season, and then extract and keep each kind separate. I lately received a letter from a person, complaining that he purchased two barrels of extracted honey from Illinois for clover, which was not the kind represented, and that he lost money on his purchase. Judging from the tone of his letter, it is evident that he thinks no pure clover honey is produced in this State.

Mr. Muth appears to have taught his patrons so that they keep the different honeys distinct and separate, so that the flavor of apple, clover, basswood, etc., is easily detected. Will Mr. Muth now take the floor, and give us directions upon this subject, and in what way the trade demands it put up?

By the way, Peoria has no need for the honey called "amber." I would not offer it to my customers as an article of food. I saw some of this honey in a store; and on questioning the proprietor he said, "I didn't buy that honey; a man left it here, and I wish he would take it away, for I would as soon have soap-grease in my store." This honey may suit manufacturers, especially cigar-makers, but it is not fit for table use.

MRS. L. HARRISON.

Peoria, Ill., Jan. 21, 1889.

My friend, you make a good point where you suggest that, if we tier up the whole product of the season, on the Dadant plan, we have our spring, summer, and autumn honey all mixed up. May be some of the combs contain clover honey, others basswood, and still others goldenrod; and I am afraid that the operation of extracting would not be so managed as to keep the different grades separate. We should like to have our friends Dadant tell us their experience in the matter. Your strictures on amber honey, it seems to me, are a little too broad. Well-ripened goldenrod or Spanish-needle honey is very nice, and, to a good many, just as delicious as clover and basswood, although the amber color is rather against the sale of it. I am well aware, however, that there is a good deal of honey on the market that is not fit for any thing, unless it is for some kind of "manufacturing" purposes.

THE EXCHANGE DEPARTMENT, AND ITS USE AND ABUSE.

TRADING "SIGHT UNSEEN."

WE have reason to fear, from complaints which have come in recently, that some of the advertisers in our Exchange Department have taken advantage of the persons with whom they have made a trade, somewhat in the manner indicated in the heading. It used to be common among boys, but we hope it is not so now, to trade knives "sight unseen." That such a practice is a species of gambling, no one will deny. To those of our readers who may not be acquainted with the plan, we would say that two boys, having each a knife which they desire to trade, make the following agreement: One of the boys, A, says to his companion, B, "Let's trade knives sight unseen." Each clasps firmly his own knife in such a way as to conceal it entirely, and then says, "Whole sides, whole blades, or no trade." The knives are passed to each other simultaneously. It matters not whether the knife is new or old, or whether the blades are steel or iron, the trade is effected, and one of the boys is almost sure to get the better of the bargain, while his companion fares the worse, of course.

Now, we have reason to fear that some of our advertisers in the Exchange Department are making their trades somewhat in the same way. Very recently a transaction took place as follows:

Mr. A advertised in the Wants and Exchange Department something to this effect: "Wanted to exchange, a Mason &

Hamlin organ, worth \$135, for a two-horse-power engine." Among the numerous answers received to this advertisement was one received from B, who stated that he had a two-horse-power Shipman engine that had been "used only a year," and which was "in perfect running order." This he offered to give in even trade for the organ. B referred A to the postmaster, who answered that B was a wealthy farmer, and that his reputation for honesty and veracity was not to be questioned. Certainly it would seem that A had taken the necessary precautions. The exchange was made; but A was greatly disappointed to find that the engine was one of the oldest styles of Shipman, and he did not think it had been used within five years. The shipper was careless enough to ship it without even crating it. The result was, that some of the legs, pipes, and gauges were broken. Indeed, A says it is not worth the freight he paid on it. A wrote B at once, and the latter sent \$7.00 to make good the repairs, stating that he had never used the engine at all, but *supposed* it was all right. He also said that he was more than pleased with the organ. A immediately felt relieved, and sent to the manufacturers for the necessary repairs. The latter stated that the engine was so old in design that they had no duplicate parts or patterns, and could not make the parts except at a great expense. A then wrote B to this effect; but B made no response, and A has not been able to get any response since, although he has written him a number of times. The engine is utterly worthless to A; and as he is at a distance from any shop where the necessary repairs could be made, he does not feel warranted in running the risk on the *mere possibility* of doing it any good.

A, the receiver of the engine, was in close circumstances, and the loss was a severe one. He says he did not mind so much the loss of the organ as the fact that the engine will not help him to make a living. In consequence of this trade, to meet a payment on a certain debt, he was obliged to sacrifice his bees at \$2.40 per colony. Each colony was bright yellow Italians, in double-walled chaff hives, and should not have been sold for less than \$10.00 or \$12.00. A says he feels no ill will toward anybody. He only wishes us to make it a warning to others who enter into such transactions.

The Exchange Department is, beyond question, a great benefit to honest advertisers, but it can be the means of fraud on the part of one or both parties. We have given the above incident in order that our readers may exercise caution. Be sure to ascertain that the article for which you wish to make an exchange is as good as represented, or that it is of a recent pattern; how long it has been used, and how much it is worth from a dollars-and-cents point of view. Be sure to ascertain all the facts in regard to the responsibility of the party with whom you think of making the transaction; and if the amount involved is considerable, be especially cautious. If possible, employ some competent party in the place to look at the goods for you.

QUESTION 102 RECONSIDERED.

ARE THOSE COLONIES WHICH CONSUME THE MOST STORES IN WINTER THE BEST COLONIES FOR BUSINESS?

ANSWERS to Question 102 show so wide a difference of opinion, that one must surely be at a loss to decide how near any of the answers might possibly be correct. Likely no definite answer can be given to the question.

The time given from October to May, seven months, is too long a time to reckon on for the consumption of stores per colony for wintering. With us, brood-rearing is carried on very heavily during April, and commences early in March. For those two months, as much honey will be consumed as during the four previous months. This is for our locality. There are exceptionally few localities where bees are confined seven months to their winter quarters; and, with such, brood-rearing must necessarily be going on. I think 30 or 40 lbs. of stores for a colony, seven months, with brood-rearing going on, is not too much. Messrs. Dadant & Son have not overestimated the amount for that period of time. Dr. A. B. Mason gives 6 to 11 pounds. He may be correct also; likely not, from October to May.

We have made cellar wintering our way for safe wintering for the past five years; and, to tell to a certainty what we gained besides the security of safe wintering, we weighed a sufficient number of colonies to get an average of what our colonies consumed while in confinement from the time they are put into the cellar and taken out, which is generally from Nov. 1st to April 1st—five months. We find for the past three winters that our colonies consumed from 3 to 12 pounds. The most of the number weighed consumed 8 and 9 pounds. We think those numbers would be very near an average for ours, only one colony consumed less than six pounds, and that one consumed 3 pounds, and was a strong colony. Said colony did as well as any that season (the summer of 1886).

In answer to the question, "Which is the more profitable, a colony which consumes more or less stores?" we could hardly say the one that consumed the most, if Question 102 means strictly the amount consumed in wintering. If 20 or 25 pounds of stores are used in wintering, and none of that amount is used for brood-rearing, that colony is no better off than if it had consumed 10 pounds if wintered in a suitable place. Colonies that we have wintered with suitable packing on their summer stands, consumed from 20 to 30 pounds in five months. Knowing the difference in stores used for outdoor and cellar wintering, we built another cellar two years ago at our out-apiary, and have now 100 colonies in it doing nicely. We have also 101 colonies at our home apiary in a cellar in which we could easily winter 400 colonies. The temperature at which our cellars are kept ranges from 40 to 45°. We haven't a single colony out of doors; and with the assurance of saving an average of 10 pounds of honey per colony, we think it pays to winter in the cellar.

J. NEBEL & SON.

High Hill, Mo., Jan. 21, 1889.

I know, friends, that certain colonies sometimes consume great quantities of stores, without being any better for it. But what I had in mind was where a colony consumes its stores in healthy brood-rearing, so as to require the larger amounts to

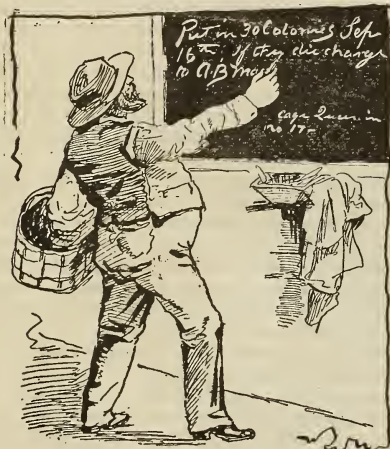
carry them clear through until the month of May.—The point you make in regard to the saving of stores by wintering in the cellar, even so far south as Missouri, is something worthy of consideration.

RAMBLE NO. 10.

THE USE OF A BLACKBOARD TO BEE-KEEPERS, ETC.

BEFORE starting upon this ramble I wish to show the fraternity a very handy article to have in the apiary. It is no more and no less than a common blackboard. Now, some one will probably say, "For conscience' sake, are there not enough traps now in the apiary, without lugging in a blackboard?"

Well, friends, let us explain. The hives in every well-regulated apiary are numbered, and have slates or something upon which to keep a record. If you put a record on the slate, of something to be attended to in a few hours or a few days, or even weeks, there isn't a bee-keeper having a large apiary but will often forget the record. The blackboard, if put up in a dry, conspicuous place, any fact placed upon it will be staring at you every time it is passed, and is thus a constant reminder of something to be attended to. Have you discovered a hive that needs more surplus room? If you are not ready just now to accommodate them, chalk it down on the board. Is there a queen to supersede, or have you caged a score of queens that need releasing at a certain time, chalk it down. We can not enumerate half of the items that will be put



THE RAMBLER'S BLACKBOARD.

upon the board during the season; but, believe the Rambler when he tells you it will save steps and worry, and enable you to do things at just the proper time. Try a blackboard. I give it to the fraternity. The record on our board now reads as seen in this sketch.

PIGEONS.

We ramble this time among the bird-fanciers. In our boyhood days, pigeons or doves were common among our best-loved pets; but if any one had asked us, a few months ago, if there was any thing in the life of a pigeon that reminded us of bees, we would have given our head an incredulous shake. A short visit to a fancier gave us many interesting

facts, and there are many bee-keepers who will be interested in one very curious fact.

The pigeon is the only bird that feeds its young with digested food. We are all familiar with the method the old pigeon uses to accomplish this, with old and young bills interlocked; and some authorities go so far as to say that this food has had two digestions—first by the male bird, then by the female. Be this as it may, the effect is remarkable; for the growth of the young pigeon is unequaled by any other family of birds. When hatched, the little pigeon weighs about half an ounce; in six days it gains to four and one-half ounces; on the ninth day, over eight ounces; and at the age of one month, over twelve ounces, or somewhat heavier than one of its parents.

While other young birds have to digest the worm, grub, or grain, the pigeon simply grows with no exertion whatever; the prepared food is simply absorbed.

The bee-keeper will readily see that there is much similarity in the life of the young pigeon and young bee in the previous preparation of the food; and if the young pigeon has the benefit of two digestions, is there any reason to think that the royal jelly in the queen-cell is not the result of many digestions?

PORCUPINES.

Our next call was upon an accomplished and successful poultry-breeder, Miss Kincaid. We wished to investigate a new breed of poultry which was exciting the public for miles around, and about which people were indulging in much loose and inflated talk. These fowls were popularly called Porcupines.

The Rambler, upon presenting himself, was somewhat frustrated, as a modest man always is before beauty and talent; but after a few preliminary remarks about the weather and the crops, I felt entirely at ease, feeling that Miss K. was much like our own folks. In fact, she reminded me of my cousin Flora Jerusha. After stating that my business was mostly through curiosity to see her wonderful fowls, we adjourned to the neatly arranged poultry-yard; and the sight there presented fully aroused the curiosity of the Rambler. It is said that beauty is only skin deep on human bipeds; and so I suppose it is only feather deep on fowls; if so, then the beauty of the Porcupine fowls lies at the roots of the feathers. Beauty is not distinguishable on the surface. The prominent noticeable feature in the Porcupines is the position of the feathers, which are somewhat pointed, and stick out at all angles, but mostly toward the head. They are not quite so happy-appearing as other fowls, and the roosters have a dilapidated, disconsolate look. I was assured, however, that the hens were great layers, good sitters, and excellent mothers. Being of only medium size, they were not so well adapted to table use, but the meat was very tender, even to old age. While I was thus being favorably impressed with the fowls, a talkative neighbor came along and gave some more interesting points.

"Why," said he, "stranger, you can put them right down in a posy-bed, and they won't scratch. You see, if they kick back too far those sharp feathers prick their shins, and they stop instantan-

"Then, stranger, there is another point that shows their intellectual superiority. When they come to a hole in a fence, if their feathers prevent an easy passage head first, they jest turn around

and back through, tail first. It's very comical, stranger, very comical."



"VERY COMICAL, STRANGER, VERY COMICAL."

Miss K. frowned very heavily upon the fellow, and assured me that it was only a small specimen of the inflated talk that was going around the community about her poultry. After an interesting study of fowls of various strains, I ended my very pleasant call and went my way, thinking of the solid facts to my profit, and laughing at the chaff.

That the young women of our land have so many avenues through which to show their enterprise and success, rejoices the heart of the

RAMBLER.

Friend R., I do think your blackboard might be an excellent thing; in fact, a blackboard is now in use among our berry-pickers. As fast as the children bring in boxes of berries, the boss writes their name on the blackboard, and gives them credit. They watch him while he does it; and if they assent to his blackboard record, no further discussion is allowed in regard to it. In this way each one can see how he is getting along, compared to his companions; and when he has finished for the day there can be no discussion, because the whole story is not only in plain black and white, but in big figures and letters at that. It may not be necessary to inform our readers that the Rambler is supposed to have put his bees away for winter, on the plan recommended by friend "A. B. Ma—." With wonderful wisdom and forethought he is just in the act of noting that all that die are to be charged to the account of "A. B. Ma—."—I have often thought of this matter of the way pigeons feed their young on digested food. I did not know, however, of the wonderful rapidity of their growth. Now, I want you to tell us just one thing more: Of what age are the young pigeons when they sell them for table use? In many places they are considered a rarity, and bring large prices.—Why, old friend, you enjoyed yourself almost as much during your rambles as I did in California. Next time I take a trip I hereby give you notice to come along with me. Both of us together would probably find most things of interest; and you could hunt up the funny items.—Are we to understand that it is yourself with your hands on your knees in the picture, or is it the neighbor who said the new breed would not scratch, and that they crawled through fences back and first?

SIZE OF SECTIONS.

DR. MILLER DISCUSSES THE MATTER OF HAVING SECTIONS OF HONEY WEIGH EXACTLY ONE POUND.

THE foot-notes to friend Kelley's remarks on page 57 leave but little to be said; but as the matter is important, I may add a word. It is unfortunate, if not wrong, to call a thing more than it is, and I am in full accord with the idea that we should give good weight, and approve the motive that impels friend Kelley; but there are difficulties in the way that make it, I think, not desirable that we should try to get up a section that will sell uniformly as a pound. Most bee-keepers sell their honey in no smaller quantities than by the case; and I never knew a case of honey to be sold otherwise than by actual weight; so when you sell your grocer a case or a ton of honey, so far as you are concerned it doesn't matter a particle whether the sections average 15 or 17 ounces, nor whether the sections are uniform in weight, or vary a quarter of a pound. If there are 24 sections in the case weighing 22 lbs., you get pay for just the 22 lbs. you sold, and so far the transaction is a righteous one. Let us follow it up. If the grocer, as he should do, weighs every section he sells, and sells it for just what it weighs, then every thing is right to the end, no matter how light or heavy the sections may be.

Before going any further I will answer friend Kelley's request, and give some weights of the so-called 1-lb. sections; and in order to have a general result I will refer to my book and give the average weight in ounces of a section in a lot of sections in each one of five years, together with the average weight of a section in the lightest and heaviest case in each one of the lots.

| | Average. | Lightest. | Heaviest. |
|------|----------|-----------|-----------|
| 1879 | 15.60 | 14.80 | 16.93 |
| 1881 | 16.34 | 15.00 | 18.00 |
| 1882 | 16.10 | 14.30 | 17.16 |
| 1883 | 14.62 | 13.66 | 15.30 |
| 1884 | 15.50 | 13.66 | 16.66 |

Notice, the number of ounces in the lightest and heaviest columns doesn't mean the lightest and heaviest section in the lot, but the average weight of a section in the lightest and heaviest case in the lot. Thus, the average weight of a section in the lightest case in 1884 was 13.66 ounces; and as these sections varied, the probability is that the lightest section in that case was not more than 13 oz. The heaviest case in the whole (in 1881) contained sections averaging 18 oz. each; and I have no idea that the heaviest section in that case weighed less than 18½ oz.

The first conclusion I reach from this table is one that surprises me. It is, that, with me, the 1-lb. section probably averages not less than 16 oz., taking it for a series of years. You will notice that there were three years when the average was below 16 oz., and only two years when the average was above. But the two crops of those two years were nearly as heavy as the three crops of the three other years; and I suspect that, if all the pound sections I ever raised were averaged, they would come as near 16 oz. as any size of section that could be made. Of course, I can't be sure of this, and I don't think it matters.

Let us now follow those two cases in which the sections averaged respectively 13 and 13.66 oz. I sold them by weight, so my conscience is all clear.

After leaving my hands I presume they went into the hands of two different grocers. If sold by weight there would be no trouble; but if sold by the section, the one grocer couldn't afford to sell at the same price per section as the other, so there would be trouble. But suppose both cases fell into the hands of the same man, and he sold them at the same price per section throughout, there would be injustice to the customer who paid the same price for 13.66 oz. that another did for 18. Every now and then some one starts up this subject, and I should like to impress the point that there is no such thing as a section that shall always weigh the same; and even if you succeed in finding one that will average 16 ounces this year it will probably differ next year. Now, friend Kelley, the thing to do is to quit striving for the unattainable, but use your influence to oppose selling sections by the piece, and insist on their being sold by weight. The former simply gives a chance for trickery, for I know there are some who sell by the piece; and it is a fact that the commission men will tell you that they can sell light sections better than heavy ones. Let us insist on weight in selling sections, always.

I am surprised to find that, notwithstanding the poor yield of 1888, 888 first-class sections averaged 15.7 ounces each. C. C. MILLER.

Marengo, Ill., Jan. 24, 1889.

There is another point, doctor: We should all of us beware about being in haste to accuse anybody of deliberate cheating. I am sure there are not many bee-keepers who have a desire to deceive their customers, especially on a matter where the use of a pair of scales would so quickly detect the fraud. Think what mischief has been done by being in haste to think evil in this matter of false statements in regard to the adulteration of honey!

NINE TONS OF HONEY.

BEEES AND BERRIES.

I HAVE been much interested with your Notes of Travel. I was in California two years ago, and bought 10 acres of land 35 miles north of San Diego, in the Escondido Valley, and thought I should move out there as soon as I could get ready, but I am not as yet convinced that it is a better honey or strawberry country than this, or yet healthier. I put in cellar 180 colonies of bees this fall. The last two years I have extracted over 9 tons of honey. It has netted me about 6½ cents per pound. With the help of one hired man I work my 80-acre farm. I have help at my out-apiaries. I give them an interest in the bees.

Last summer I raised 41 bushels of strawberries on four rods less than one-fourth acre. I was busy with my bees when strawberries were ripe, so I told my wife that, if she would see to the picking of them, she might have all she could make and I would see that they were taken to town. She quietly pocketed 50 odd dollars, besides ten dollars in trade. I think it was the best investment I ever made, as it was so handy to borrow a dollar or two now and then, to be paid back when the honey was sold, and then it seemed to go so far. If I had had had it, it would have been gone in no time. I think if I live and have luck I shall do so again. I should like to raise comb honey, if it were not so much work, and not so much danger in shipping. I have

a plan on which I should like your opinion. It is simply a box, made of very light material, to hold 7 one-pound sections, with light tins nailed on the bottom, and a bee-space above, so they can be tiered up. Four of those would go on a hive, to be taken off completed, a box at a time, and shipped about 8 in a crate. The boxes could be covered with light berry-box material when packed in the crates, and nailed slightly with small wire nails. They could be pried apart a little, to lift the sections out.

Viroqua, Wis., Jan. 12, 1889.

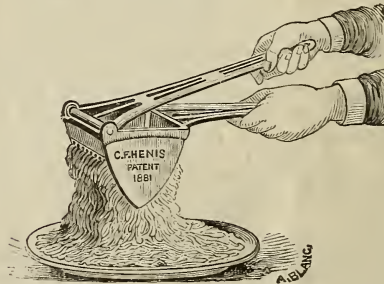
WM. COX.

In regard to moving I think you are right; so long as you and your wife are doing as well as you have been doing where you are, I think I would let that California arrangement lie still, for you will have many drawbacks and inconveniences before you can get things into shape there.—There are several modifications of the plan you mention, for a honey-box holding 7 sections; but I believe they have not found very much favor. The arrangement is more expensive than the T supers, and does not seem to ship as safely as the ordinary cases made expressly for shipping the honey. If you ship the boxes, containing the 7 sections, with them, you have an additional amount of material to ship and to be returned if not lost.

THE PRESS STRAINER, FOR BEE-KEEPERS.

SOMETHING FOR EXPRESSING WAX AND SMALL QUANTITIES OF COMB.

I PRESUME that most of the friends have seen different forms of these fruit and vegetable press strainers advertised. In fact, a friend sent us a cut of one clear from Australia, saying that we certainly ought to keep that on our counters. The cut below gives a pretty good idea of the machine.



FRUIT AND VEGETABLE PRESS STRAINER.

It is simply a metal pocket, made of galvanized iron and heavily tinned plate. The sides of the pocket are made of perforated tin. To use it, raise the handle, fill the pocket with grapes, currants, strawberries, or any other sort of fruit. Now bring the handle down, and every particle of juice is squeezed out so as to leave but comparatively dry pomace. It can be used for mashing potatoes, prepared sweet potatoes, or pumpkins for pies, mashing turnips, making catsup, making beef tea or broth, rendering lard, and last, but not least, rendering wax on a small scale. Throw your pieces of comb into boiling water until they be-

come soft, then put them into the strainer and squeeze out the wax, or put your bits of comb into a coarse bag, not too large; and when it is boiling, drop it into the machine and push down the lever. The latter arrangement is also used for getting the juice from berries, and where there are many small seeds. If your paste or paint is lumpy, put it through the press and all your troubles in that direction are ended. In the same manner it can be used for almost a hundred different purposes. The regular price is 50 cents; but by buying them in quantities we can furnish them for 25 cents. If wanted by mail, you will have to send 20 cents extra.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

FASTENING FOUNDATION INTO BROOD-FRAMES BY
NAILING IN A STRIP.

YOU will please find inclosed a small section of an improved top-bar for honey-frame. As it is very simple, it needs but little explanation. The object of this device is to facilitate the work of fastening the foundation in frames, one of the triangular strips being nailed fast, as you see. The comb being clamped between the two strips, the latter can either be fastened by nailing, or a little wax be used to make it stick. As you are a practical man, you will readily see the merits of this little invention (if it has any), without further explanation. I have shown the device to several bee-men, and they all seemed to think it a good thing. I do not send this as a "patent" to sell to you, but simply to give to you. If you can make use of it it will be a gratification to me if you do so. I am not a bee-man; in fact, I don't think I ever shall be. Being a mechanic, I am sometimes called upon to make a few hives, etc., for bee-men. My wife is a little struck on bees ever since she has been reading GLEANINGS.

Bellville, Tex., Jan. 15, 1889. J. J. STOPPLE.

Your device, friend S., is very old. It was illustrated in one of the back numbers of our journal, GLEANINGS IN BEE CULTURE. It never came into practical use, for the reason that such a fastening costs too much, and was little if any better than the comb-guide method of attachment—that is, pressing a sheet of wax on to the guide.

A FOUL-BROOD INSPECTOR FOR CALIFORNIA.

The Board of Supervisors have seen fit to appoint me as foul-brood inspector for Ventura Co. The county pays me for my time. I think that, if the bee-keepers do not avail themselves of this opportunity of getting rid of foul brood it will not be the fault of the new Board of Supervisors.

HONEST BEES AND HONEST NEIGHBORS.

I remember that, when you were here, you expressed some surprise at my leaving 15 tons of honey in a frail shanty at the apiary, 10 miles from Newhall. I just came from the apiary, and I found every thing just as I left it in August. People don't steal bees or honey in California. I have been a bee-keeper for 16 years, but I never had my bees winter as well as they have this winter. I have 800 hives, and my loss this winter is only three

hives to the 100. About the same number are out of honey. The rest are full of honey, and I shall have to extract several tons before the new honey comes in. My bees are honest, as well as the people in California. I had six hives that were upset. They had been lying on their sides for months, for aught I know, with the supers full of honey, but were not robbed. This is a case of honesty or home protection (or what is it?). L. E. MERCER.

San Buena Ventura, Cal.

Friend M., it rejoices our hearts to hear of instances like those you mention above. The indications all seem to point now to the fact that we may not only very soon dispense with the fences around our dooryards, but that we may save money which we have heretofore invested in padlocks and expensive burglar-proof buildings to protect our property. You certainly have a very nice set of people around Ventura. Why, even here in Ohio, where we have schools and churches in every little town, and at a good many of the road-crossings, crops of wool and grain are quite frequently taken out of barns; at least, such cases did happen a few years ago. I wonder if it is not true, that the whole world is climbing up a little higher in this matter. I am very glad that you have received the appointment of inspector of foul brood, and I hope you will do your duty faithfully.

CALIFORNIA HONEY; ITS GRADES AND QUALITIES.

I have been very anxious to see something from you about the honey produced in California, as you no doubt had a good opportunity while there of learning from what source, and in what part of the State, the best honey is secured. I have bought and sold a good many tons of California honey this season. Some of the honey is, to my taste, the finest in color and flavor that is produced in the world, and, again, much of it is the most disagreeably flavored honey I have ever tasted, if I may except some of the dark grades of Southern honey. The white, or water-colored California honey (when entirely free from that disagreeable flavor found in almost all of the amber honey) is superior to our best clover honey. Every time I have sold this ill-flavored amber California honey it has greatly displeased customers. I wish I could find the producer or dealer in whom I could rely to give me always the best grade. It would be interesting to your readers to have what you must have learned about the different grades of honey produced in California. J. A. BUCHANAN.

Holliday's Cove, W. Va., Jan. 7, 1889.

Friend B., the amber-colored honey of California comes mostly from the valleys and low lands. The beautiful water-white sage is found only among the mountains, and away up in the canyons, where the bears, and lack of civilization and neighbors, and many other things, make it unpleasant to camp out; and most of the bee-men, as I have told you, are getting back away from the fruit-lands, into the mountains, where the sages flourish. Other people besides ourselves have discovered the good qualities of the water-white mountain-sage honey of California; and whoever gets it in the future will have to pay a good price

for it. I am glad of it too, because it tends greatly to encourage pushing bee culture out among the mountain-wastes.

FEEDING BEES IN THE CELLAR.

I should like to ask you if it would be safe to feed in the cellar for the purpose of building up stocks, say $\frac{1}{2}$ pint every day. I mean, I should like to have them strong for the fruit-blossoms (about the 25th of April), which are very considerable here—apricot, cherry, plum, apple, peach, pear, raspberry, and others. If you can answer immediately, it will oblige me very much. M. D. OWEN.

Douglas, Mich., Feb. 5, 1889.

Friend O., feeding *has* been done in the cellar successfully, but a good many others have had trouble. If you want to feed liquid food, you will have to fasten the bees in the hive by means of wire cloth, or the excitement of feeding will make them come out—at least, it is pretty apt to do so; and if confined and fed a liquid food, they are quite likely to get the dysentery. By far the better way would be to give them candy; but I would by no means think of feeding them any thing unless it were to prevent them from starving. If you commence feeding them liquid food for stimulating, when they are gathering their first pollen, I think it will be soon enough; and even then I believe that many think that better results are obtained by giving them combs of sealed honey. Some recommend uncapping the honey to stimulate them to raising brood more rapidly; but urging brood ahead of the season is *likely* to do harm, no matter how you manage it.

WHY BEES BUILD COMB BETTER AT ONE TIME THAN AT ANOTHER.

C. C. Miller's problem as to whether bees build heavier comb at one time than at another, p. 20, is very satisfactorily solved. But in a super of mine containing 28 1-lb. sections I observed something so different from any thing that I had ever seen before, that I called the attention of Mr. C. C. Eddy, a bee-man, to know if he had ever witnessed any thing like it; and his reply was that he never had. If C. C. Miller's theory is universally true, then I should be pleased to know why all of the middle sections in a super I had, contained nice beautiful thinly drawn comb, while all the outside sections contained some of the heaviest and most ill-shaped comb I ever saw, resembling mud-wasp cells. I use the house apiary. The supers are set on top of the hives, and with an oil-cloth cover on top, and nothing around the super. The doors were kept open, and there was plenty of ventilation, until the honey-flow closed. The colony to which the super in question belonged produced over 100 lbs. of comb honey the past season. J. A. GOLDEN.

Reinersville, O., Jan. 25, 1889.

As you state it, friend G., we feel pretty sure that you gave your bees *too* much ventilation—that is, their surplus receptacle was too cold for them to build uniform comb throughout the super. You say the middle sections contained thinly drawn comb, while the outside ones contained heavy comb. Of course, the middle sections were directly over the brood-nest, where there was the greatest warmth. The outside sections were subjected to the cool-

er air from without. You know that comb-building, in order to progress properly, should be in a close compartment, with a moderately high degree of temperature. The comb in the warmest parts of the super would work the most easily. That near the outside would work harder, and the bees would no doubt take less pains to thin it down.

A MINNESOTA BEE-CONVENTION.

A convention was organized here on the 17th of this month, for the purpose of getting together all the bee-keepers in the State, and many from Western Wisconsin and Northern Iowa, as quite a portion of those two States is near Minneapolis. The first meeting will be held at the Experimental Farm, with the Horticultural Society that meets in June next. All bee-keepers, and those interested in raising small fruits as well as bees, are earnestly requested to meet there. I assure you that you will have a good time. Due notice will be given through the bee-journals and the press. All correspondence will be cheerfully answered by the secretary,—

WM. URIE.

Minneapolis, Minn., Jan. 22, 1889.

THE MANZANITA OF CALIFORNIA, ETC.

I send you a twig of manzanita bloom. The bees have been working on it since the first of this month. We have had but little rain since you left. I will say nothing about the honey crop until I get it in tanks. I was sorry you could not stay with me a few days, but I suppose the old gent and I would have smoked you off the ranch. I hope to see some of your folks out next winter, to come and stay awhile.

G. W. LECHLER.

Newhall, Cal.

Friend L., we found a few bushes of the manzanita in bloom the day we left your beautiful ranch. Please give my respects to Mr. Friendship, the "old gent," as you call him, and tell him for me that, when you two old cronies have your big smoke, be sure that none of the boys are around, for it might teach them bad habits. I hope that huge tank will get filled a good many times during the coming season.

ROARING IN WINTER QUARTERS.

I wish to say a word in regard to Question 95, Dec. 15, page 969, about bees roaring in the cellar. A year ago last November, while passing through my bee-yard I heard a colony roaring so I could hear them plainly several paces off, and found them crawling on the bottom-board and front of the hive, outside; and upon opening the hive, every bee, so far as I could see, was on the move, as if looking for something, but none took wing. The temperature was several degrees below freezing, and the roaring lasted several hours. The next January I heard another roaring in the same way, in the cellar. I marked both hives, and in the spring found both queenless.

M. B. HAMMOND.

Ellenburgh Center, N. Y., Jan. 11, 1889.

Your point is, friend H., that this roaring is in consequence of queenlessness, or rather, perhaps, that the colony has just discovered that it is queenless. If giving them a queen results in quieting them, which it would, very likely, it would strengthen your position. I have seen colonies out of

doors in the summer time, running all over the hives, each bee making a mournful noise with its wings, and this happened not long after I had removed the queen; therefore I took it for granted that it was a lamentation over the loss of a queen. At such times the colony is pretty certain to accept any sort of queen you have on hand to give them; and some authors have recommended removing the queen and waiting until the bees begin to mourn or "roar," as you term it. The trouble is, however, the greater part of the time they start queen-cells without any roaring at all; at least, we do not discover any.

WHITE CLOVER; WHAT IS AND WHAT IS NOT FAVORABLE TO ITS GROWTH?

I should like to read a thorough essay on the subject of white clover, particularly as to what conditions are most favorable to its growth, and what kills it off so thoroughly some seasons. Five years ago, when I came to this State, it was abundant everywhere, and two fine crops of honey followed the succeeding years. Then the dry August and fall of 1886, followed by a severe winter, destroyed it almost completely. Was it the drouth or the winter, or both, that killed it? Will freezing and thawing kill it as it does wheat and red clover?

Chillicothe, Mo., Jan. 9, 1889.

B. A. RAPP.

I think that freezing and thawing does kill white clover, but I am not prepared to answer further as to why it is plentiful during some seasons and not at others.

THE EFFECTS OF THE RECENT CYCLONE IN A PENNSYLVANIA APIARY.

Wednesday afternoon, Jan. 9, we had a regular old-fashioned western cyclone. It went right through our bee-yard; and when I went out I would almost have given away bees, hives, and all. The wind upset 15 or 20 hives, dumped the bees on the ground, then carried the empty hives away. Some of the hives were blown 200 ft. I was out as soon as the worst was over, and picked up all I could. From some of the hives we lost over one-half the bees, as it was blowing and hailing. Next morning I went out and picked up bees by the handful, brought them in, and revived them. Within a square of our place, four houses were leveled to the ground, besides a part of a large factory just finished (Demorest sewing-machine factory), but happily no one was hurt. I hope the next cyclone will take another direction.

FRANK W. LIGHTON.

Newberry, Pa., Jan. 17, 1889.

Friend L., we are very sorry to hear of your losses during the storm of Jan. 9; but it verifies what I said about the warning the barometers gave us on that morning. Most of you, probably, have heard about the destruction of the bridge just below Niagara Falls, at the same time. I knew nothing about that when I wrote that editorial on page 69. Not only serious losses of property, but a great loss of life, resulted from that cyclone which our barometers foretold.

A NOVEL METHOD OF FINDING BEE-TREES, AND A GOOD ONE TOO.

Although out of season, I thought I would send you a plan for bee-hunting. Get on the north side of where the bees are likely to be, and in an open space if you can. Get a good line. If the sun has

passed that line for the day, leave it and go the next day; and when the sun gets on the line, with your hatchet in your hand start for the sun, lopping bushes or marking trees as you pass, and mark the line to the extent of where you think they go. Then retrace your line and find your bees. I have never failed to find them over four rods from my line, and that was where they were behind a high hill, and would pass a low point of the hill, and then take nearly a right angle to get to their home. If you get two or three lines, as I have sometimes, take the early one as the sun comes to it, and then the next, and so on. J. ANDREWS.

Pattens Mills, N. Y., Jan. 9, 1889.

THE BEST TREES, BOTH FOR TIMBER AND HONEY.

Do bees get honey from the following: White-ash and elm blossoms? soft maple? walnut-blossoms? honey-locust? box-elder? larch-blossoms? What trees are best to plant for the combined purposes of timber and honey? There are no natural forests here, but we plant our groves.

Sharon, Kas., Jan. 23, 1889.

J. L. PELTON.

I believe that bees occasionally work on all the trees you have mentioned, and, for that matter, there is scarcely a tree or plant known, that produces blossoms, that is not visited by the bees, say during an occasional season. Probably the best honey-plant in the world, all things considered, is basswood, and basswood timber is now bringing a very fair price for a variety of purposes. I think I would put whitewood (or tulip) next. Perhaps others can help fill out the list.

DOES SHADING HIVES TEND TO DISCOURAGE SWARMING?

What effect would a shade over hives have on swarming—shade high enough for an operative to be able to walk under, the same as Casanova's, of Cuba, shade to be put up about June 1st, so bees would have the advantage of the sun nearly up to swarming time? What has been the average crop of honey for the last 10 years in the different localities of your answering correspondents? State comb and extracted.

I. LANGSTROTH.

Seaforth, Ont., Can., Jan. 23, 1889.

It has been several times suggested that bees often swarm because their hives stand directly in the sun, and get too hot, especially where the hives are dark-colored. I am inclined to think that the color of the hive and its full exposure to the sun might have some effect in hastening the issuing of swarms.—The average crop of honey secured by the leading bee-keepers in the United States, according to reports in our Question-Box for Sept. 1, 1887, was 50 lbs. per colony for comb, and from 75 to 100 lbs. of extracted. While occasional yields ran away up beyond this, the average is pretty nearly as we have stated.

QUEENS INJURED BY SHIPPING.

On page 23, Jan. 1, I find: "If you and friend Doolittle are correct (and you may be to a certain extent), why is it that we have never heard more frequently of such failure of egg-laying before? Now, it is just possible that your last sentence explains the difference in our experiences." That is just it. Friend Root, of the 2000 or 3000 queens which you sell annually, these are all, except about

150 or 200 queens, of the untested ones, which are most invariably taken from a nucleus hive, in which they have never been required to fully stock themselves with eggs in order to supply their colony, as tested queens usually are necessarily compelled to do, and are usually removed to the shipping-cage while in that condition. This is very wrong. I have found that, to remove a laying queen, in the height of her laying season, from a populous colony, and ship her, generally speaking she is a failure, to a large extent thereafter, as a prolific layer. The same conditions may exist when we take a queen and cage her in a full colony for ten days, and she suffers no deterioration from it, being just as good as ever when she is liberated and gets down to business again. Therefore it has been my practice, the past year or two, when expecting to ship a queen that is in a strong colony, and a prolific layer, to either confine her to one or two frames in her own hive, or remove the hive to another stand, leaving the queen and two or three frames on the old stand for a few days before shipping her. It works like a charm—no complaint being made of queens so treated before being shipped. No matter how prolific they were before shipment, they are the same when received by the purchaser.

So, friends, never ask a queen-breeder to send you "a prolific queen out of one of your strongest colonies," as most buyers are apt to do when ordering a queen, especially if it is a tested one. Rather get a well-developed queen out of a nucleus or weak colony—one that is not overtaxed in egg-production at the time of shipment, but, rather, one that is capable of developing up to your requirements after you receive her.

Not one in a hundred, mailed from a nucleus or other small colony, have I ever had any complaint from. Queens appear to time their egg-production according to the requirements of their hives; hence in one instance it is very rapid; in the other, it is slow and more fitted to meet the requirements of shipment by mail, without loss or damage thereby.

ABBOTT L. SWINSON.

Goldsboro, N. C., Jan. 26, 1889.

I think you put it a little too strongly, friend S. While we do have now and then reports of extra prolific queens not laying at all after a trip through the mails, I do not believe that such reports come oftener than, say, two or three in every 100 queens taken right from full colonies in the height of the laying season.

WINTERING OUT-APIARIES AT HOME, AND MOVING THEM JUST AFTER THE HONEY-FLOW COMMENCES.

I wish to ask a question or two. Brother and I have about 125 colonies of bees, about half in the cellar, and half in Root chaff hives. In the spring we wish to buy 25 colonies, making 150 altogether. For the surplus-honey harvest we wish to divide our apiary, and have 75 colonies in two apiaries, 3 miles apart. Can we run all together in one yard up to within two or three weeks of the honey harvest, and then about May 15th move half of them 3 miles, so as to increase the yield of honey per colony? By having all together, we can save one man's time for nearly two months.

Our folks feel as if GLEANINGS were one of the essentials, as we have been subscribers, off and on, for twelve or more years. It seems only a few days

since I paid our subscription for two years in advance, and one of them is almost up.

We began last spring with 70 colonies, some rather weak, and increased to 125, and in July extracted pretty closely, getting about 3600 lbs. Add to this 600 lbs. of comb, taken later, makes 4200 lbs. of nice honey. We expected to feed, for winter, sugar syrup, as we can sell extracted and comb for 18 to 20 cts. per lb.; but our bees gathered, after July 25th, about 1800 lbs. more honey, enough to winter, which we left in the hives for that purpose.

Rockaway, Ohio, Jan. 18, 1889.

H. F. MOORE.

Friend M., I believe this is exactly the way that C. C. Miller, Boardman, and perhaps many others, are already managing. If your home locality is overstocked, however, your bees would not breed up quite as well if you delay removing them until the honey-yield commences.

CHAPMAN HONEY-PLANT SEED; CAN IT BE OBTAINED OF THE GOVERNMENT?

I saw the notice last spring in GLEANINGS, stating that the Agricultural Department at Washington had obtained seed of the Chapman honey-plant, for distribution. I applied to our representative, and he notified me that he had never heard of such a plant, but said that he had sent my application to the department, since which time I never heard from it. Were any of your readers more fortunate?

POLLEN BEFORE THE BIG STORM.

On the 8th of this month (the day before the big storm) we noticed a few bees come in laden with pollen of a yellow color, and this morning some of mine from chaff hives were flying before 8 o'clock. I fully concur with Dr. Morrison, of Oxford, Pa., that bees are not looked after in this section. Many that went into winter quarters with plenty of stores in the fall may be found dead in the spring.

FERTILE WORKERS, AND HOW TO TELL THEM.

Please tell me how to distinguish a fertile worker from other bees. I should like to know. I had such a colony destroy two Italian queens for me the past summer, in one hive, before I found out what was the matter with them. I then concluded the cheapest way was to sulphurize the colony. The one Italian queen they kept in the hive for 8 days, before I found her dead on the outside.

Duncannon, Pa., Jan. 17, 1889.

A. L. LANE.

Friend L., I can not help you any about procuring seed of the Chapman honey-plant. I opposed the measure of asking the Government to buy friend Chapman's seed, at the National Convention held in Chicago; also at the Michigan State Convention at Saginaw, a year ago. Some of the friends who were in favor of it admitted that the Government Seed Bureau was a big humbug any way; but they gave, as an excuse, that friend Chapman might as well have some of the humbug money as anybody else. They did not state it in just that way, but it amounted to that. Now, the \$2800 that was paid to friend Chapman for his honey-plant seed might almost as well have been thrown into the fire, in my opinion. The seed is very likely stowed away with other old rubbish, and it will probably get too old to germinate before it gets into the hands of bee-keepers, if it ever does at all. Another thing, I do not believe that any bee-keeper wants a lot of Chapman honey-plant seed

until he has first tested it by trying a five-cent package; and even after it has been so tested, and the seed was wanted, I am not sure that it could be had of the Government. Perhaps I am a little uncharitable here; but I can not help feeling indignant at this whole proceeding—not only in honey-plants, but seeds for almost all other purposes. There have been a good many complaints just like yours, friend L., that they could not get the seed of the Chapman honey-plant, even after the Government had paid \$2800 for it; and it is not only this kind of seed, but seeds in general are managed a good deal in the same fashion. Our agricultural papers have for years shown it up, and protested that our money should not be wasted in such senseless proceedings, but still it goes on. This is the first time I have publicly spoken about the matter, and perhaps I shall never have occasion to speak of it again.—In regard to your last question, I do not believe that anybody has yet discovered any way of telling a fertile worker from the rest of the bees, other than the way in which the bees behave toward her. You have yourself described how we can know how fertile workers are present. The presence of two or more scattering eggs in the cells, the rearing of drone brood over worker-cells, etc., are some of the tests. For a full description of fertile workers, you had better see the A B C book.

HONEY VINEGAR NOT INFERIOR TO CIDER VINEGAR FOR PICKLING PURPOSES.

I have just read Emily West's letter, and I think I can say something in favor of honey vinegar for pickles. I don't know much about making pickles—only just a little bit, so my letter will not be very long. Last fall I made sweet pickles of green tomatoes, and made piccalilli also, making both the usual way, but using honey vinegar. They were put in the cellar in open stone jars, and are as good now as when first made. I have made tomato pickles with cider vinegar, and had them spoil in a few weeks; but these have given me no trouble whatever. I have not been successful with cucumber pickles until this winter. I always put them into cold vinegar after freshening, fixing only a quart at a time, as I knew they would get a white scum on them, and soon spoil. This fall I freshened nearly two gallons, and scalded them in the vinegar with a little sugar, enough whole cloves to give a spicy taste, and a small lump of alum. They are even better than when first pickled, I think, and the vinegar is as clear and strong as ever. The sugar gives the vinegar something to work on, and so keeps up its strength. The cloves keep the white scum from forming, and the alum hardens the pickles, making them brittle. ALICE FELLOWS.

Broadhead, Wis., Jan. 21, 1889.

HONEY VINEGAR; 10 BARRELS OF IT.

I am very much interested in bee culture (as I should be) since I have lately linked my fortune with those of an apiarian. Last year Mr. Ludden made a barrel of honey vinegar, by way of trial; and all who tried it came for more, consequently this year we have ten barrels on hand. Now, in reply to Emily E. West's article: When I came here I found that a jar of cucumber pickles on which Mr. L. had been experimenting were faring the

same as yours had. Boiling does not destroy the virtue of the vinegar, and perhaps so doing before putting on the pickles would overcome the difficulty. How old was the vinegar you used?

Shelby, Iowa, Jan. 21, 1889. LULA LUDDEN.

The vinegar we used was white-wine vinegar; but I have been told since that it was not strong enough to make pickles to keep through the summer.

SWEET CLOVER.

I received a copy of GLEANINGS, Jan. 1st, shortly after I had written my last, and noted foot-notes on my article. I am afraid you are a little too (excuse me) enthusiastic about honey-farms of sweet clover. The point here is simply this: that, whatever dry soil will grow sweet clover, will grow alfalfa, or lucerne, and it pays better than clover, even taking the nectar into consideration. JNO. C. SWANER.

Salt Lake City, Utah, Jan. 21, 1889.

Many thanks, friend S., for your caution; but my idea was, that the sweet clover would cover the ground if the seed were simply scattered over it, without any such preparations as are needed for alfalfa; and I think this must be somewhat the case, for sweet clover makes its way through the country at large, while, if I am correct, alfalfa never does. The seed of sweet clover is so cheap that one might throw it broadcast on our unoccupied land and not be much out of pocket, even if it did not amount to much.

BEEES FROM IMPORTED, VERSUS THOSE FROM HOMEBRED STOCK.

Do you consider that imported queens produce better workers than one that has been raised here from several strains, provided they have been kept pure? or, in other words, as long as they show three bands are they just as good honey-gatherers as lately imported ones? J. T. RUSH.

Hesler, Ky.

To the question which you propound, no uniformity of answers may be expected from different ones. We think that stock direct from imported queens, as a general rule, is a little more hardy and vigorous than that produced from queens inbred so many times in our own country. The great tendency with breeders is to run for color, i. e., "nice yellow bees," "four-banded bees," etc. What we want is not color, not bands, so much as bees for business—bees that will produce big crops of honey. Our experience has been rather in favor of the leather-colored Italians as honey-gatherers, and these we generally get from imported mothers. Stock bred from queens reared in this country for several generations is pretty sure to be lighter colored; and this tendency to run to color, as we have already intimated, we are afraid has been at a sacrifice of the real bread-and-butter bees.

A QUESTION OF SETTING CIRCULAR RIP-SAWS.

I am about to use one of your 20-inch rip-saws. The business is new to me, although I am well used to hand-saws. I have an intelligent neighbor who has run sawmills near your home. He says that he sets rip-saws by swaging or hammering. Now, I admit we can get a very even set that way; but it strikes me that the hammering ruptures the

metal, makes it brittle, prevents it holding an edge, and makes it hard to file. I should like your opinion. I have read the A B C, but it doesn't cover this particular point. I like the plan there given best. I am making a saw-table, somewhat under this neighbor's directions.

WM. YOUNG.

Palmyra, Neb., Jan. 18, 1889.

Large heavy saws can be set by hammering, but it does not answer so well for small saws less than $\frac{1}{4}$ inch in thickness. You are right. The hammering, in setting, does rupture, and not unfrequently breaks the teeth. We formerly recommended the Star sawset; but as the Boynton has given so much better satisfaction, we shall recommend it hereafter. Perhaps we should remark, that the Star sets the teeth with a sharp blow. The Boynton accomplishes the same result by simply bending the teeth gently, but perhaps not quite as accurately, as the Star. Either is provided with a gauge, so that any desired set may be used. The Star set broke so many teeth that we were obliged to use something else. Since using the Boynton we have had no trouble with the same grade of saws that formerly broke. Both sets are listed in our catalogue at 75 cts. each.

WHAT MADE THEM DIE?

On Christmas I thought I would take a peep at my bees. I found that one colony had died. They were clustered, and some of them had crawled into the combs and died. There was honey all around them, and I don't think it had been cold enough to freeze them. They were in Root's one-story chaff hive. The hive was packed well, and I can not make out what caused their death; but I could not find any queen. There were two quarts or more of dead bees in the hive. Will some of you tell me what caused their death?

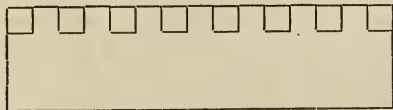
J. W. RUPERT.

Foxburg, Pa., Jan. 30, 1889.

It is difficult to decide just what did cause the death of the colony in question. In the absence of a queen, a colony is more apt to die. They seem to get the idea into their heads that, without a mother in the house, life is not worth living. Bad stores might have been the cause of their death. If so, then their hive ought to show some signs of dysentery.

HOUSE-APIARIES, HEXAGONAL, SQUARE, OR OBLONG.

I expect to build a bee-house this season, and write to ask if you have had any experience with bees in such a house as I propose to build.



I think this arrangement will work, but I desire to get all the information I can, before building. The squares show the hives. The spaces between the hives are 30 inches, from entrance to entrance.

Westminster, S. C., Jan. 14, 1889. R. E. MASON.

Friend M., your plan of a bee-house would work, but we would suggest that one hexagonal in form, or even square, is much better than one oblong, built as you propose making. In either one of the former, the

operator can have the extractor, etc., in the center of the building, and the steps he would be obliged to take are reduced to a minimum. Another thing, bees will find their entrance better in such a structure. We suppose you are aware that house-aparies have been discarded by the majority of bee-keepers. You will find their advantages and disadvantages are very well and fully covered in the A B C of Bee Culture.

STRENGTHENING WEAK COLONIES IN WINTER.

Would you advise giving a weak colony a quart or more of bees to strengthen them, or not? Does the Chapman honey-plant grow and do well in this part of Texas? What honey-producing plants or trees will be the most profitable to grow here for honey and fruit, and also just for honey?

ENOCH ANDERSON.

Comanche, Tex., Jan. 11, 1889.

Friend A., it is hard to advise for your locality. If the bees are bunched up in a small cluster, and seem to take no more space than a quart measure, they are probably strong enough. On the first few warm days they will probably expand out enough to make a respectable-looking swarm. Some of the strongest colonies here in the North are so much packed together that you would almost think you could get them into a teacup; but when a warm day comes they will fill the whole hive. If the colony you speak of is weak in reality, then perhaps it would be well for you to give them more bees, preferably from a queenless colony.—We can not tell you whether the Chapman honey-plant would do well in Texas or not; probably it would. You had better consult some bee-keeper in your locality.

CHANGING TO ITALIANS, AND BACK AGAIN TO BLACK BEES; HOW DID IT COME ABOUT?

Friend Root:—I have for a few years been a silent admirer of the Simplicity hive and your bee-literature, and now I feel like standing up and telling you how happy I am to be a member of your A B C class, and to be numbered among the thousands who are so fortunate as to be subscribers to GLEANINGS. Not unlike many other beginners, perhaps, I have had some failures in bee-keeping; but by the use of the Simplicity hive and the aid of the A B C book and GLEANINGS I have secured crops of honey which in quantity and quality astonished my "log-hive" neighbors who are apt to look upon any attempt at intelligent bee-keeping as a mere experiment or humbug.

The honey-season here for 1888 was very good.

I wish to here relate a bit of strange experience with a hive of bees—strange to me at least—on which I hope you will give a little explanation: Of the four queens ordered of you at different times, I succeeded in introducing one nicely. She proved to be a good layer, and soon I noticed my combs were well filled with brood. A little later, and hundreds of young Italians might be seen in the hive. The Italians increased rapidly, while the black bees gradually disappeared, until very few of the latter remained. Thus far I felt truly proud of my success. But soon, to my consternation, I observed that my golden-banded beauties were gradually decreasing in numbers, while the blacks were as sure-

ly on the increase. The result was, that the whole colony were again black bees.

I can now easily account for the presence of those Italians in that hive; but where did the eggs come from to produce this last lot of blacks?

Cisco, Ga., Jan. 21, 1889.

W. A. CAMPBELL.

Friend C., I think you must have left a queen-cell in the hive when you introduced your Italian queen. This queen-cell hatched, and the bees, as they do sometimes, you know, permitted both queens to live together in the hive. In due time the black queen became fertile, and may be both queens supplied the hive with eggs at the same time. Sooner or later, however, unpleasantness arose, and the question had to be decided. I think you will find the proof of what I say, by finding a black queen in your hive, instead of an Italian. I know this *may* be the case, for I have had the same thing happen. I have seen the young queen and the old one for weeks side by side, and have also, in a few cases, known the young queen to become fertile, and to commence laying, without any conflict between the two.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper, and marked, "For Our Question-Box."

QUESTION 106.—*What is the earliest date at which you regard it safe, usually, to remove your bees from the cellar, in your locality? In answering this question, make no account of exceptional weather or unusual circumstances of some seasons.*

| | |
|--|-------------------|
| April 1. | MRS. L. HARRISON. |
| March 10 to 20. | DADANT & SON. |
| About April 1st. | GEO. GRIMM. |
| April 15, or later. | C. C. MILLER. |
| 1st to 10th of April. | H. R. BOARDMAN. |
| From the first to the middle of April. | |

I have had too little experience with cellars to name a date.

E. E. HASTY.

From the 15th of April to the 10th of May, according to the season.

G. M. DOOLITTLE.

We have made it a rule to get them out as soon after the middle of April as possible.

P. H. ELWOOD.

About April 10th; as soon as pollen can be gathered. I would make the date later were I to change at all.

A. J. COOK.

In my locality in Iowa, the first gathering of natural pollen varied from April 6th to 25th. This is as good a guide as I know of, when to remove bees from cellar.

O. O. POPPLETON.

Take your bees from their special repository, and place them on their summer stands as soon as you find that those which have been left out are gathering pollen—not before.

JAMES HEDDON.

When I read this question, the first answer that came to me was, "None of your business," and I

don't know as I care to give any other; but if I don't, then what? Whoever asked that question ought to ask a few more and then quit. "Make no account of exceptional weather," etc. Well, well! the weather is what we go by here, in removing bees from winter quarters. I think Dr. Miller answered that question pretty well at Columbus. He said, "About two weeks after the right time."

DR. A. B. MASON.

I have nothing to add to the above, that I know of, except that I prefer to have them on their summer stands all winter long.

QUESTION 107.—*If brood-rearing in the spring can be controlled, would you consider it desirable to have your young bees hatch before the weather is warm enough for them to fly?*

No.

GEO. GRIMM.

Some, yes.

DADANT & SON.

I can never get them any too soon.

MRS. L. HARRISON.

I think not; but I don't think my opinion of much value on that point.

C. C. MILLER.

I prefer no breeding till the bees are let out of the cellar about the middle of April.

A. J. COOK.

I am ready to take my chances on them after they are hatched; but cold weather before is what troubles me.

P. H. ELWOOD.

No. I do not think there is much to be gained, as a rule, in having brood-rearing begin to any extent before March 15th.

JAMES A. GREEN.

I have had the best success in getting a good honey crop in seasons when the colonies were being rapidly strengthened by hatching brood when removed from the cellar.

DR. A. B. MASON.

Never mind trying to control brood-rearing in the spring. Spend your time in a better cause. I do not consider very early spring breeding desirable.

JAMES HEDDON.

I don't wish to see breeding progress in good earnest until about the middle of March; therefore I leave the entrance wide open, and make no special use of division-boards until then.

CHAS. F. MUTH.

My bees that were wintered in chaff hives in Iowa would seldom rear brood until the old bees could fly. I can not say from experience whether early brood-rearing is desirable or not; but I think not.

O. O. POPPLETON.

It is a nice point to decide, as to just how early it is profitable to have brood-rearing begin (that is, if we could control it). I am well satisfied that it does not pay to have it begin any earlier than it will be continued uninterruptedly until the bees are set out.

H. R. BOARDMAN.

Yes, I think it good to have the hive populous with young bees as early as their condition and instincts will admit of it, although there are seasons in California favoring early breeding so much that, when a cold snap comes, the cluster contracts enough to allow one-third or the half of the brood to perish. In such a case, less haste would have made more speed.

R. WILKIN.

Yes, provided the bees are in a perfectly healthy and natural condition—and such do sometimes raise considerable early brood with profit to themselves

Abnormal brood-rearing, which seems to be merely a phase of dysentery, is a thing to be dreaded. I think the young bees so raised likely to perish without profiting the colony very much.

E. E. HASTY.

They should fly soon after they hatch. I have known some cases where Italian queens were introduced to native stocks just before placing the colonies in winter quarters; and when taken out the first of May they were very populous, and nearly all of the bees were Italians; but I think the rule is, that bees winter best which do not breed extensively in winter quarters.

L. C. ROOT.

If brood-rearing could be controlled, I would have the bees wait about it till settled warm weather came, providing that no material loss of old bees would occur before the brood hatched; but as the bees are still liable to do as they please in this matter, as they have done in years past, I do not know that it is of any use for me to express an opinion in the matter.

G. M. DOOLITTLE.

My opinion is, that the above question is a hard one to answer positively. I have had colonies raise brood almost all winter long, when well packed in chaff, and come out stronger in the spring than when they started into winter quarters; and at other times I have had them give excellent crops of honey when no brood was started until some time in March. Some years ago we had a very warm, sunshiny March—so much so that people made gardens, and the bees gathered pollen in large quantities. During that spring I had, as a matter of course, quite a number of weak colonies. Old hands advised me not to undertake to winter them; but they commenced brood-rearing in March, and gathered not only pollen, besides working on meal, but made such large patches of brood that I was jubilant. Well, during the latter part of March or the fore part of April we had a succession of cold storms that cut off the supplies and contracted the cluster, until they could not cover the brood, to such an extent that my prosperous young colonies were killed outright, almost every one of them. In this case, encouraging early brood-rearing was the death of them. Had they been kept in the cellar, or been under heavy chaff packing, where the sun could not reach them, and no meal given them in the spring to incite to early brood-rearing, they might have lived. We should remember, however, that, during most seasons, if they get along well, say as late as the first of April, they will probably be all right. These facts may help us to bear in mind what *may* happen.

QUESTION 108.—*If one worker-bee, called A, stings another called B, does A lose its sting, according to your observations? If not, why?*

I never observed.

MRS. L. HARRISON.

No. I don't know why.

GEO. GRIMM.

According to my observation, no. A is careful, and stings where the tissue is too frail to hold the sting.

A. J. COOK.

I have seen but one bee sting another. A queen was stung by a worker, and died immediately. The sting was left in the queen.

DR. A. B. MASON.

Not usually, because the sting is not in very deep.

DADANT & SON.

My observation is, that the bee does not lose its sting in the above case. It seems to be able to withdraw the sting.

L. C. ROOT.

If A stings B in the soft part of the abdomen, A is not apt to lose her sting; if in the breast or back, she will lose it generally.

C. F. MUTH.

One bee does not lose its sting when using it as a weapon upon another bee, because it is sufficiently strong to do the work without being injured.

H. R. BOARDMAN.

Sometimes, but generally not—very rarely, in fact. I suspect the sting is thrust into one of the breathing-holes, from which it can easily be withdrawn.

C. C. MILLER.

I never knew a bee to lose its sting by stinging another bee. I think the sting can always be withdrawn from any thing not more solid than the body of a bee.

R. WILKIN.

I have not noticed that they lose their stings. I have not investigated the matter, but have concluded the parts between the segments are soft, so that the sting may be withdrawn.

P. H. ELWOOD.

I do not know, but I guess not. Professor Cook will tell us about that. I do not care any thing about it. It is much further from apicultural dollars and cents than many other questions which I do not understand, but desire to.

JAMES HEDDON.

I have seen them sting and kill, without losing the sting; but I have seen some trying to pull away from the one stung, without succeeding. I think it depends in what part they sting, and they seem to know it, as may be observed when they are trying to sting each other.

PAUL L. VIALON.

He does not, generally, I believe. The power required to tear the muscles of the sting loose is less than the power required to lift bee B and pull him around. Even when the sting takes a firm hold of something solid, bee A can get it out by whirling around with a corkscrew rotation.

E. E. HASTY.

No. Because the sting does not penetrate deep enough so that the barbs catch and hold, as they do when thrust deeply into the flesh of an animal. I have frequently been stung so lightly myself, that the bee took its sting with it, after twisting around a little to withdraw the sting.

G. M. DOOLITTLE.

I never knew a bee to lose its sting in stinging another. I presume I have seen many thousands of bees that had been killed in this way, but I never saw a sting in one, pulled out from the body of another. I suppose this is because the sting is inserted between the horny plates of the body, which are too hard and close-grained for the barbs of the sting to catch on, while the tissues between are too soft and yielding to hold it.

JAMES A. GREEN.

Why, friends, I am surprised at you. Not one of the whole number, unless it be friend Green in the last item, has mentioned or even suggested cases where say half a swarm of bees are stung to death in a couple of hours. In fact, I have known a nucleus, containing less than a quart of bees, to sting to death an absconding swarm of two quarts or more, that tried to get into their hive, and the whole was done during a

few hours in the afternoon. Now, in this case I do not think a single bee in the whole nucleus lost a sting. The dead bees that covered the alighting-board and partly filled the hive were all blacks, and I do not remember of finding a single Italian among the mass of dead ones. In such cases they certainly do not lose their stings nor receive any harm. I have, however, seen bees, when trying to sting a strange queen, sting each other in such a way as to leave the sting fast in the dead bee. In such a case I can not see how the unscrewing operation can be put in practice at all, for the dead bee has not weight enough, and, of course, does not cling to anything, so that the one that stung him has to lug him around or loosen his sting as best he can.

NOTES AND QUERIES.

We solicit for this department short items and questions of a practical nature; but all questions, if accompanied by other matter, must be put upon a SEPARATE slip of paper with name and address.

BEES WORKING IN JANUARY.

MY bees were busy at work, Jan. 23, 24, and 25, working on the hickory stumps where clearing is being done on my father's farm. But since that it has been very cold. I do not mean the thermometer has been 40° below zero, for it has been down to only 8 above zero. My bees are in a splendid condition.

Loring, Kansas, Jan. 27, 1889. P. C. CHADWICK.

FROM 5 TO 21, AND 1700 LBS. OF HONEY.

I commenced last spring with five colonies of Italians, and increased to 21 during the season, and got 1700 lbs. of honey. I have about 40 gallons of candied honey on hand now.

A. THAMES.

Blum, Texas, Jan. 2, 1889.

TOWARD WHICH POINT OF THE COMPASS SHOULD THE HIVES FACE?

What side do you prefer for the bees to fly? I think to the east is the best, winter and summer?

Deshler, O., Dec. 3, 1888. T. OBERHITNER.

[We have for years tried hives with their entrances facing toward the different points of the compass; and, take it all through, for a whole year, the difference is so slight that I do not think it material.]

TO CLEAN TIN HONEY-CANS.

What is the best way to clean last year's tin honey-cans that are a little rusty inside, for honey next year?

P. MULLEN.

Green Isle, Minn., Jan. 14, 1889.

[I do not know any better way to clean honey-cans, where the opening is too small for the hand to go inside, than to put in some coarse sand, and shake it about until it scours off the rust. If you can get your hand through the opening, take some sand on a cloth, and scour it bright.]

CARBOLIC ACID VS. SMOKE, FOR INTIMIDATING BEES, ETC.

I don't see anything in your journal, about the carbohc acid spray. I have used it, and find it very successful. I never use a smoker now (and I never did smoke), so I am not asking for one. I find the spray the best quieter, and quickest for manipulating, and it keeps bees healthy.

J. DANN.

Wisbech, Scotland, Jan. 15, 1889.

[We have tried the carbohc-acid spray in lieu of smoke. It will answer tolerably well if the smoker

does not happen to be handy; but for real execution, smoke is far ahead. We have tried a great many substitutes; but every time we have gone back, fully satisfied that smoke is better.]

WHICH GOES OUT WITH THE SWARM?

When a swarm of bees comes out naturally, does the virgin queen come out, or does the old one come out? Which one leaves the old home or hive?

BEE-KEEPER.

[The old queen leaves with the first swarm of the season, and this rule has but few exceptions; in fact, with the Italians, a great part of the time the old queen leaves before the young one is hatched, and sometimes even before a queen-cell is built, so you see it can not possibly be the young queen, when there is not any young queen at all in the hive.]

EIGHT OR TEN FRAME HIVES—WHICH?

In handling my bees last year it seemed to me that 10 frames in the Simplicity hive were too many, as you recommend in the A B C book, both in the brood-chamber and in top story, for the production of honey. Do you still claim 10 frames as the right number in the Simplicity hive?

EDWIN HOLTKAMP.

Bellville, Tex., Jan. 22, 1889.

[An eight-frame hive may be better for the production of comb honey; but for a general-purpose hive, and particularly one for extracting, we should prefer one with ten frames.]

HONEY-JUMBLES; SOUTH MISSOURI.

Will you please give a recipe for making honey-jumbles? Can you or any of your readers give me any knowledge of the honey resources of South Missouri?

S. G. PALMER.

Tobias, Neb., Jan. 4, 1889.

[The nicest honey-jumbles are made only by appropriate machinery, such as is to be found in large bakeries—at least, that is my impression.—The only way to find out about the honey resources of Southern Missouri, or any other particular locality, that I know of, is to look over the reports in the back volumes of the different bee-journals. If you contemplate moving, it might pay you to purchase all the back volumes you can find, and hunt them over. Better still, go on an excursion-trip and make inquiries.]

REPORTS DISCOURAGING.

NO LOSS DURING WINTER, BUT DISCOURAGING JUST THE SAME.

MY report for the last two years has been discouraging. I feed more syrup than I get honey; but I am not discouraged. I am going to hold on a while longer. I have been in the business four years. I have now 24 stands in good condition. I take GLEANINGS, and have your A B C book. I use your chaff hives, and I have never lost a colony yet.

Horatio, Ohio, Jan. 28, 1889. NOAH THOMAS.

NOT PAID EXPENSES; WHY THE BEES DIED.

My bees have not paid expenses for the last two years, and I am getting tired of stuffing bees and getting no stuffing. I was not at home in the fall when they should have been fed, and some of them have died with cramp in the stomach. Will you please say whether you know, by experience or otherwise, the effect of beet-sugar candy, shortened with flour, for this fatal disease? I gave them all a dose of that kind of medicine a few days ago, to see how it would work.

M. V. EWBANK.

Wheatland, Ind., Jan. 29, 1889.

Beet sugar is not equal to cane sugar for winter food—at least, the editor of the

British Bee Journal so thinks. The addition of flour to the bee-candy as a winter food is a little risky, even with the best granulated sugar. We recommend the admixture of flour, only for the purpose of stimulating brood-rearing in spring; but it is hardly to be advised in the dead of winter.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: *Sheer Off, Silver Keys, The Giant-Killer; or, The Roby Family, Rescued from Egypt, Pilgrim's Progress, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I, and Our Homes, Part II.* Besides the above books, you may have a photograph of our old house apiary, and a photograph of our own apiary, both taken a great many years ago. In the former is a picture of Novice, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

CONDUCTED BY ERNEST R. ROOT.

WE haven't received many drawings from the little folks yet. Haven't we got some little artists among our number who write for this department? Oh, yes! we are sure we have. Remember to make the drawing represent something useful, and remember, also, to make the picture without the aid of papa or mamma.

PAPA'S BEES.

My pa has 30 swarms of bees. They swarmed six times last summer. He has 11 colonies in chaff, on summer stands, and 19 in cellar. He carried them in his arms. He has the entrance the whole width of the hive, and a top entrance. He put the bees in the last of November.

North Monroe, Maine.

WILBER L. BOYD.

HOW PAPA WATERS HIS BEES.

Papa has 28 hives of bees. He saw them gathering pollen the middle of January this year. They got it from alder-blossoms. Papa had one swarm of bees last year on the last day of March, and six more the next week. I will tell you how papa waters his bees. He lets the water drip slowly from a barrel on a plank that slants downward.

Cuthbert, Ga.

JOE DUGGAN, age 9.

ABOUT A PIG.

Last winter my grandma gave me a pig. I fed it lots of corn and milk, and it got very fat. I told pa if he would get me a little wagon he might have the pig, and so he got me the wagon, which cost \$2.25, and then something got the matter with the pig's throat, and about two months ago it died. I got my pay for it any way.

Stewardson, Ill.

ERNEST BALDWIN.

PACKING-BOXES.

My father winters his bees on their summer stands. He gets a box that is larger than the hive. Between the box and the hive we fill with chaff. For the roof we use siding, and the whole amount cost 25 cents besides the work. We never lost any bees while we wintered them that way, and they seem to do first rate.

HANS C. NELSON, age 14.

Barnes, Kan.

NOT A CARP-POND, BUT A TROUT-POND, AND ONE THAT TWO BOYS MADE.

My pa hasn't any bees, but he got two colonies three years ago; and when winter came he put them in a little underground cellar out of doors. It got so damp in the cellar that the bees died. He has a sawmill, and has a lot of saws, and can saw frames and lumber for hives. He is going to get some bees by and by. He is going to get some carp also. We have a good place for a pond. My brother and I made a pond, and caught some trout and put them in it. They were from 2 to 12 inches long. They would swim around and jump up for flies. One died because the water was too warm.

ERNEST SEATON, age 14.

Ellensburg, Wash. Ter.

FOUL BROOD AND CHESHIRE'S REMEDY.

Five years ago papa had 46 colonies, and they all got foul brood. Papa tried Mr. Cheshire's remedy of "Calvert No. 1," phenol, early, on one, and then built them up to a full colony. They cast three swarms that summer. Papa hived the new swarms in clean hives, and buried the combs of the parent stand. The past season was a very poor one. We got hardly honey enough to pay for the work. Mamma hived all the swarms with the weak ones. She caged the queen that came out with the swarms, and let her run back into her own hive.

Coldwater, Mich.

IDA CARLS, age 10.

You say in your letter, friend Ida, that your papa tried Mr. Cheshire's remedy. Although you intimate that the bees were cured, you do not say so in so many words. As you are perhaps aware, this remedy was a failure with us. So far as we can observe from the letters of our correspondents, it is not very apt to be a success in the hands of any one. We should be glad to know whether the parent colony stayed cured.

WANTS A LITTLE ENGINE; PAPA'S FRAME-LIFTERS.

Papa has 8 colonies of bees, mostly Italians, in Simplicity hives. He is wintering them on their summer stands. He put the hives in boxes, and packed them with leaves and chaff. He makes his own bee-fixtures. He has a foot-power saw, but he wants a little engine very bad. I have made sections and frames alone, and they looked as well as papa's.

Papa made two hooks to take out frames with. The ring is large enough to put one or two fingers into; he puts it under the frames and lifts them out. I thought if I wrote about it you might send me a book. This is a picture of it.



Grafton, Vt.

GEORGE E. WALKER, age 11.

If your papa has many hives to make on a foot-power buzz-saw, I do not much wonder that "he wants a little engine very bad." See what we say in regard to foot-power versus steam, on page 91 of our last issue.

Your papa's frame-hook will answer the purpose, but we should very much prefer to use the fingers. We have sometimes used such an arrangement to "heft" the frame—that is, to find out its weight in mid-winter, when the day is warm enough to warrant disturbing the cluster. In lifting up the chaff cushion, burlap, etc., we find that it saves a little time to use such an implement. A little experience in lifting up at one end will tell about how much stores there is in each frame—consequently how much there is in a hive.

HOW PAPA HIVES SWARMS; NO HONEY FROM WILD CUCUMBER.

My father hives bees in this way: The bees generally alight in a low place; then he gets the table and puts the bee-hive upon that. He brushes them down into the hive, then covers them up quickly, and lets them stand until after sundown; then he moves them to their permanent places. Last summer we had a new stand of bees, and their combs broke down twice. Papa had quite a time changing them into a new hive, in order to save them. He makes his own hives. We got only a few pounds of surplus this year. Papa sends to you for his supplies. The wild cucumber seems to be a honey-plant in some places, but it is not so here, for we raise them every year. It seems queer that the bees never go near it, as it is so fragrant. I like to hear papa read your travels to California.

Waco, Neb., Jan. 26, 1889. EVERETT PHiERY.

MY BROTHER'S BEES, AND HOW WE HIVE THEM.

My brother takes GLEANINGS. He had 9 stands of bees, and they increased to 14. It was a very poor season for honey. They made enough for themselves, and we got but a few pounds of surplus honey. My brother left them out in the orchard, where they were all summer. He says they are in good order. The way we hive them is this: When they are up in the tree, so we can not reach them very well, we saw the limb off and shake them under a sheet, and thump on the top of the hive. They always go in. Once when the folks were all away but my two sisters (one of them is fourteen and the other is but nine) and two visitors, we got a looking-glass and settled the bees. I got things ready for my brother and he came and hived them. He took a bucket and shook them into it. He covered them up with a cloth, and put them under a sheet, and covered them up until they went into the hive. JOSEPH MILLER.

Ege, Ind., Jan. 23, 1889.

GOATS; WHITE RATS, BEES, AND OTHER PETS.

I have been reading this morning in GLEANINGS the little folks' letters, which put me in the notion to write. We have 25 goats, and one of them is just as pretty as it can be. It is just 24 hours old. We have two kinds of goats, the common stock goat, and the Angora goat. I think the Angora goat is the prettiest. It is white, with long curly wool. The common stock goat is black and white spotted, and it has short wool. Mr. Root, did you ever see a white mouse? I never did, but Mr. Littleton, the doctor who put mamma's teeth up, is going to bring us some; and if you want any white rats I will try to send you some. Grandpa has 24 beehives, and they are doing well so far. I have one

hive of my own, but grandpa tends to it. I live with him. Ma keeps house for him, as my papa is dead. He died last April. He was sick two years. I have two brothers—a big brother and a little one. I live at Albany Switch, a little place between Henry and Paris. I go to Henry to school, and board from home. Grandpa takes GLEANINGS, and it is always a welcome visitor. I have a pet cat named Veda. When I call, it will come running as fast as it can. I like to go to school. My teacher's name is Miss Lillian Walters. She is tight, but still I don't think she is any too tight. If we talk one day we have to write one hundred words; and if we talk two days we have to write two hundred; and if we talk three days, we have to write three hundred, and so on. LOUNETTE CARTER.

Henry, Tenn., Jan. 19, 1889.

Your letter is very interesting, friend Lounette. We thank you for your very kind offer; but as we have so many of the common kind of rats and mice, we shall hardly want to accept of their white relatives. We have seen them, and they look very pretty in their cage.

A HOME WITHOUT A PAPA.

In the spring of 1887 I wrote to you that, the summer before, we built a large hay and cattle barn, and a creamery near the well. We had been renting the fields for four years, but that year papa hired a man and ran it again himself. Papa's health seemed much better. In the fall he plowed some fifty acres with the riding-plow, which he hadn't been able to work in the field for eleven years. It seemed nice to have him well enough to be out around. He taught me much about farming; but on Jan. 6, 1888, he took a heavy cold and kept getting worse, and spitting blood every day, and April 1st he died, which leaves mamma alone with four children, and I am the oldest. We had a sale, and sold off all but what we needed for convenience. We kept two swarms of bees. They were in chaff hives. We have a great number of hives that we did not sell at the sale. Mamma says that, as long as she lives on the farm, she will keep bees. In 1888 we had to rent the farm again to four of our neighbors. I went to school six months—two in the spring and four in the fall. In harvest and haying I worked for 50 cts. a day. I earned \$21, which bought me all that I needed. This year mamma rented all the farm to our nearest neighbor. I think it is nicer than to have so many different men working the farm, because they seed down their own farm and run down the rented one. ARTHUR J. BOSSEMEYER, age 13.

Dixon, Ill., Jan. 23, 1889.

PA'S SOLAR WAX-EXTRACTOR.

I have long wanted to get the book, Ten Nights in a Bar-room, so I am going to try to get it. I will send you a drawing of pa's wax-extractor. It is a box about a foot and a half long, a foot wide, and about ten inches deep, with a double cover. The upper cover is lined with tin; the lower cover is glass, both hinged to the box. Inside there is a screen that rests on small cleats in which you put the comb. Below this is a small dish which catches the wax. When the cover is up in a bright sunny day the heat will reflect from the tin through the glass, and melt the comb very rapidly.

Pa has 20 swarms of bees, packed in the Wolverine chaff hive, which he makes to sell. He wintered 17 colonies without loss last year. Mamma's name was Root, and she has an uncle whose name is Hezekiah Root. He lives about five miles from G. M. Doolittle. His business is bee-keeping. Grandma Root lives with us. I have a brother by the name of Huber. He is three years old. I am eleven years old.

RUEL H. RAWSON.

Quincy, Mich.

Your drawing, friend Ruel, is very good, and represents the idea very nicely; but as it is very similar to the engraving in our price list, with the exception of one or two details, it will hardly pay to have it engraved here, for everybody knows how that is made. We do not wish to carry the idea that you copied your picture from the engraving, for we are sure you did not, because of some little details. If the little folks will read Ruel's letter and compare it with the cut of our solar wax-extractor, they will get an excellent idea of the same. We suppose you know that the wax rendered by the heat of sun is yellower and nicer than that rendered by any other means.

A PAIR OF OLD SHOES.

BY EUGENE SECOR.

The daintiest white leather that ever grew
On the back of an innocent mountain kid,
With laces once red, and tassels once blue,
Make the shoes in which baby's pink toes were hid.
'Tis true, that these "booties" are out at the toe,
And slightly the worse for wear at the heel;
But new ones never can interest me so,
Nor bring to my heart such innocent weal.
Each wrinkle is prized by the mother-heart,
And reminds her of smiles on her darling's face;
Each stain is more precious than work of art,
For baby's sweet mouth these lines did trace.
For the few happy months while these have been worn,
My life has been one perpetual hymn;
Since she came to earth by kind angels borne,
My cup of joy has been full to the brim.
While these were worn, the first pearly teeth
Brought as pleasant relief as did Noah's white dove;
When the first steps were taken, these shoes were beneath
The precious load of sweetness and love.
With fond recollection I often recall
Her innocent prattle when perched on my knee,
With language so simple, yet puzzling withal,
She charmingly tried to entertain me.
As these little old shoes are tucked away,
And tenderly kept with scrupulous care,
We think of the toddling wearer, and pray
That those feet may be guided from every snare.
We pray that the Shepherd may guard this lamb,
And shelter her always in his safe fold;
May her life, like these shoes, prove not a sham,
And her worth like these, need not to be told.

TOBACCO COLUMN.

CONDITIONS UNDER WHICH WE GIVE SMOKERS TO PERSONS WHO STOP USING TOBACCO.

First, the candidate must be one of those who have given up tobacco in consequence of what he has seen and read in this department. Second, he promises to pay for the smoker should he ever resume the use of tobacco in any form, after receiving the smoker. Third, he must be a subscriber to GLEANINGS. Any subscriber may, however, have smokers sent to neighbors or personal acquaintances whom he has labored with on the matter of tobacco-using, providing he give us his pledge that, if the one who receives the smoker ever uses tobacco again, he (the subscriber) will pay for the smoker. The one who receives the smoker in this case need not be a subscriber to GLEANINGS, though we greatly prefer that he be one, because we think he would be strengthened by reading the testimonials from time to time in regard to this matter. The full name and address of every one who makes the promise must be furnished for publication.

STEPPING HEAVENWARD.

I COME to you with two new candidates for the Tobacco Column. I do not keep bees at present, but I go to Carlstadt every week to manage a farmer neighbor's bees for him. He has no smoker, so I told him about your offer. He thought it over awhile, and then said, "Friend H., I will try it right off, as I have smoked and chewed tobacco for the past eight years or so. I will also give up drinking beer, to which I have been addicted for quite a few years. If I start again, I promise to pay you all it costs."

Friend Root, I have a show to see that he keeps his promise, because I am out there every week. He is a farmer, and well to do. If he breaks his promise I will see that you get your pay.

I am the other candidate. I have given up smoking the pipe and cigar, to which I have clung about seven years. I do not need a smoker, as I don't keep bees at present; and I also have a Bing-ham; but I only want it to show to friends, and tell them about your offer, and see how long our promise lasts.

FRED HOLTKE.

Hoboken, N. J.

Friend H., may God bless you both in your undertaking. Most gladly do we send you the smoker to show your neighbors, and to exhibit as an object-lesson in gathering new recruits. Our readers will please notice that your friend accepted your suggestion as something in the right way, for he voluntarily, of his own free will, put his beer-drinking with the tobacco, and throws them both overboard. You may think that the heading which I put to your kind letter is a little extravagant; but, in my opinion, leaving off habits which you know to be bad is one of the surest steps toward righteousness that a man can take.

TOBACCO MONEY TURNED INTO A LIBRARY OF 300 VOLUMES.

Let me give your readers who are leaving off the tobacco habit an idea that occurred to me when I laid aside the weed nearly eighteen years ago. At that time I resolved to invest in good books the same amount of money, yearly, that I would have spent for tobacco had I continued its use. The result is truly surprising. I have now a library of nearly 300 volumes, to which I am still making frequent additions. I have often wondered if our worthy editor ever was a slave to the weed; and if a personal knowledge of the filthiness of the habit, combined with his good will to all, prompted his liberality to those who promise "to do so no more."

Mingo, O.

I. M. MARTIN.

Why, friend M., it seems as if there were a providence in having your bright cheering letter follow right along in the wake of the one above it. Who shall say there are not plain evidences of the hand of God in this Tobacco Column? May God bless you for the example which you have set before us all. No, dear friend, I never used tobacco. But there is no credit due me at all for *not* using it. It did not happen to be in the line of my temptations. Your question reminds me of a jovial friend of mine who has a comic way of declining, when a cigar is offered him. He replies something like this: "No, sir. I tell lies and drink whisky, but I never use tobacco." The laugh that this creates lets him out with a good grace. Now, I do not want to have you think that I drink whisky, or that I ever did; and I am trying very hard not to tell lies, even little ones, either by word or by act.

OLD TOBACCO MONEY TURNED INTO CHRISTMAS PRESENTS.

I am very thankful to you for inspiring me to stop using tobacco; for with the money thus carefully saved I have bought for my little girl such Christmas gifts as not many children in this neighborhood can enjoy; and, besides, I feel much cleaner and better since I no longer handle the accursed weed.

ED E. SMITH.

Carpenter, Ill., Dec. 23, 1888.

Why, friend Smith, yours too is inspiring. The money that you have been using for indulgence in a filthy habit has been transformed into useful and wholesome gifts for your little girl. Another thing, that same little girl (and may God bless her) can now climb up into your lap and give you a kiss, without any misgivings that your mouth may not be clean enough for her innocent little face to approach.

A GOOD RESOLVE AT THE END OF THE YEAR.

I shall soon be 26 years of age. I am a single man. I commenced to take GLEANINGS less than a year ago. I have purchased 11 colonies of bees, and expect to keep bees for a livelihood henceforth; but the worst of all, I have used tobacco for the last five years. I did not chew, but smoked. At last I let decency get uppermost, and on the last day of 1888 I bid adieu to tobacco in every form. So far I find it no trouble to do without, and, by the grace of God, I will never use it again. I have a brother, who is 2 years younger than I, who used the weed for 12 years in every conceivable form, and was a slave to it. Two years ago he quit it, and has never touched it since. He is going to the State University at Morgantown. We were the only ones, out of a family of 4, that used the weed. I do not charge a smoker for my little self-will, but only ask that I may have grace sufficient to enable me to overcome my bad habits.

S. RAY HOLBERT.

Watson, W. Va., Feb. 6, 1889.

BREAKING THE HABIT THROUGH GOD'S HELP.

I tried to quit using the weed in my own strength, but I failed, afterwards I tried again and prayed to God to help me and now I neither smoke or chew, or drink liquor, nor have I any desire or appetite for either.

A. W. MAKER.

Urbana, Ill., Jan. 5, 1889.

MYSELF AND MY NEIGHBORS.

The heavens declare the glory of God, and the firmament sheweth his handiwork.—Ps. 19: 1.

A NOON-DAY PRAYER-MEETING IN THE CITY OF LOS ANGELES, CAL.

MONDAY it was my pleasure to attend a noon-day service in the busiest part of the city. I got in early (did you ever know, dear friends, that a special blessing often attends those who are first on hand in God's house?) and was pleased to receive a kindly welcome, with outstretched hands. And before the meeting opened we early comers had a most pleasant little family talk. I am told that a man and his wife keep up these meetings, at their own expense. God has blessed them, and their income is sufficient so they can afford to do this work in this busy city, without pay. Yet, dear friends, it is *not* without pay, as the genial light and love in their faces attest. I was obliged to leave before the service closed, but a brother followed me to the door, and gave me some tracts, a copy of which I give below, in small type.

PROFIT AND LOSS:

IF I GET SAVED I SHALL

| LOSE | GAIN |
|--------------------------|----------------------|
| Sinful pleasure. | Holy joy. |
| Wicked associations. | Divine fellowship. |
| Ill-gotten gain. | Treasures in heaven. |
| Worldly wisdom. | Wisdom from above. |
| Heart condemnation. | No condemnation. |
| Doubts and fears. | Peace in believing. |
| Friendship of the world. | Friendship of God. |
| Dread of the future. | Blessed hope. |
| Everlasting punishment. | Eternal life. |

THESE ARE SCRIPTURAL FACTS!

Since I may die any moment, I had better reckon the loss and gain just now.

"What shall it profit a man if he gain the whole world and lose his own soul?"

THE RESULT OF CHOICE IS ETERNAL!

COME TO THE GOSPEL MEETINGS

at the

KADEAU BASEMENT.

Corner First and Spring Streets.

Noon prayer-meeting from 12 to 1 daily.

Salvation meeting every night.

Sabbath services 10, 3 and 7 p. m.

To Huber.—Dec. 11—Papa is now away up in the clouds—in the clouds resting on the Rocky Mountains. They are a great bother just now, for I wanted to see the valley below, but I can't see it at all, nor the hills above. May be, however, we shall soon get up to be above the clouds. We are now just about half a mile high; but in four hours more we shall be over a mile and a quarter *right straight up*. The railroad book tells us just how many feet high we are every time we stop.

While we are waiting to get out of the clouds, I want to tell you of something else. Last Saturday we were on Long Beach. It is called so because it is a good many miles long, and the ocean waves have washed it as clean as a stone sidewalk. The water, as it comes rushing and roaring up in great waves, is full of bright sand that shines almost like silver. Well, every wave drops some of this sand; and, what is very funny, you can walk on this clean sand with your best slippers, and not soil them a bit. My friend even drove all over the beach with three of us in the buggy, and neither the wheels nor the horses' hoofs sank a bit;

and then he drove right out among the splashing and roaring waves, until I begged him to go back. While we were there, a lot of boys and girls came down with bathing-suits on, and they just splashed right out into the ocean. They would just stand still and let a big wave knock them over, and one little girl who had a very pretty bathing-suit and bathing-hat just sat down until a big wave came up, then she tipped over back, and all we could see of her was her heels kicking about as they stuck out into the air, from the crest of a foaming wave. When she came out she looked as rosy as could be, and I saw her next day at Sunday-school. My friends wanted me to go in, but I think I like the warm springs best, especially in winter time.

Hello! the old engine has been puffing and puffing, and now the wheels have slipped so much it is standing still. We are above the clouds, and they lie below us like a great ocean. Here we can see the pine-trees on the opposite side of the clouds, so it is now like a great lake. A boy in the next seat declares it is a lake. Now we see little "puddles" of clouds settled in the low spots or hollows between the hills.

Later.—Our old locomotive has had to give it up—it is too hard climbing. The passengers are all out in the moonlight enjoying themselves on the mountains. I don't know what they expect to do.—*Later.*—They telegraphed for a "younger" locomotive (the other was an old one), and now we are just making the gravel fly as we climb up.

Dec. 12.—We are over the mountain, but still 4500 feet high. On my homeward trip I have decided to try a cheaper way of travel. I started in the ordinary coaches; and by sleeping in my seat I have saved \$3.50 per day thus far. I slept pretty well, and, were it not that I should come before my friends looking worn out, I think I should keep it up clear home. Last night I took a sleeper, \$2.00, providing I got up at 6 o'clock, which, of course, I should do any way. A nice clean bed, where I could stretch my limbs at full length, was a luxury after a night in the seats. Reader, did you ever thank God for a clean soft bed, with plenty of room? If not, do so now, and thank him that it doesn't cost \$2.00 a night.

This morning, while the passengers were loudly complaining of the poorness of a breakfast (here at Battle Mountain) that cost them 75 cts. each, I enjoyed a most delicious repast here in the car at a cost of thirteen cents. Shall I give you the bill of fare? A huge but delicious California pear, 5 cts.; crackers and cheese, 5 cts.; home-dried figs, 3 cts. The crackers and cheese were in a large paper bag, set in my open sachel, placed in the seat beside me, so I could, by holding my head over it, avoid unsightly crumbs on my seat or person. In fact, I finished my breakfast before daylight. The fruit I got of boys at the stations where the cars stop. Never buy fruit on the cars. One train-boy wanted 25 cts. for three apples, and was abusive because I told my neighbor that, in Ohio, we could get a bushel for 25 cts. I did not mean the boy should hear me. There is certainly a great

wrong in this matter of "daily bread" in traveling. When I first arrived at Los Angeles it was 11 o'clock at night, and raining hard. The hotel right at the station, and in which the Southern Pacific have located their ticket-offices and waiting-rooms, charged me \$1.75 for lodging and breakfast, neither of which was first class. A few days later I had lodging and breakfast at the oldest hotel in the city, with a pretty room, lighted with gas, and all accommodations to match, and yet the charge was only 75 cts. *without the dollar.* The extra dollar I paid was to support a gilded whisky-shop; and my friend, the man who sells liquors, may be expected to defraud and swindle, for he acknowledges himself devoid of conscience by the act of liquor-selling. Is it not time for good people to refuse to stop at any hotel keeping a bar? At the one mentioned, a glittering display of liquors occupies one whole side of the room for the reception of guests.

In traveling in California I have felt much better to drink no water at all, not even tea and coffee. The luscious fruit, to be had in such profusion at every season, furnishes all that can be desired to allay thirst.

Noon.—Since crossing the Rockies we find the ground and still pieces of water frozen over, and the beautiful gardens have given place to winter; but until now we have seen no snow. Strange to tell, while there isn't a particle of snow here, right over a little way, across a sharply defined line, are mountains and highlands perfectly white with snow. I have thought for half an hour we must run into the snow soon, but it still stays just about so far ahead of us. Well, I have found out why it is winter in some spots and not in others. The white mountains are the highest; and here at Wells the snow-line is sharply defined. The snow comes down just so far and no further; in fact, a farmer might plow up to where the snow commenced.

Near the State line between Nevada and Utah we see miles upon miles of a sort of fence, to prevent snow from drifting on the track. It is simply a sort of board fence leaning away from the track. They are used only where the track is lower than the ground. Sometimes they are on one side of the track and sometimes on the other, though I can't say why. At some points immense sheds, going clear over the track, and inclosing it like a tunnel, are put up. These must have cost an immense sum, even though they are evidently made of cheap lumber.

Another little mountain is white with snow, while a great big one is entirely bare. Both are close by, but the white one is just a little beyond. Now, as we ran up by them the white one proved to be miles away, and ever so much the higher; yet when I first saw them, had anybody told me the snow-covered one was the larger, but miles away, I should have called it ridiculous. Snow capping is a pretty good indication of height. I have often been told, for no one can tell by appearances.

Six o'clock, and now the monotony of the sandy old desert is enlivened by the advent

of Salt Lake itself; and it is so accommodating as to come right up close to the car window. We are to ride along its margin for 3 hours, for it is about 90 miles long and 30 or 40 wide. It is so heavily saturated with chemicals, principally common salt, that no fish has ever been found to live in it, nor, in fact, any kind of animal life. One of the passengers said it was reported that two pails of water will make one pail of salt; but this is, of course, an exaggeration, as the water of Salt Lake is but 24 per cent salt. Bathers say it is almost impossible to keep under water, as it is so dense. After the bath you must be rinsed in pure water.

Dec. 13.—When I first arrived in Salt Lake City I did not at once get hold of the bee-men, and began to feel almost homesick; but when I hunted up one or two, and really let them know that A. I. Root was "here," it has resulted as many times before, and I have had a wonderfully pleasant time. In this region, where irrigation has to be depended on for every thing, they get good yields of beautiful honey nearly every season. The story of its source is really wonderful. Just listen: Much of the ground here is so strongly alkaline that nothing can be made to grow on it; in fact, the grass and whole surface of the ground is white with the alkali. I said *nothing* would grow; but there is one exception to the rule. *Sweet clover* will grow rank and strong, and the farmers have actually been sowing it for years, and plowing it under to get rid of the "saleratus" as they call it. This has scattered the sweet clover far and wide, and this is what gives them their beautiful honey, with a flavor that is exquisite to me, and, at the same time, unmistakably sweet clover. This plant is among the very few that will live through the long dry season.

The hives used here are the Kidder and crosswise L., mostly; but one friend, Mr. George Woodmanse, is succeeding beautifully with the new Heddon hive. He makes them himself, however, and he is a remarkably fine mechanic. The sample hive sent him by the inventor was not as accurately made as his own.

Dec. 14.—Although it rains, I have had the pleasure this morning of seeing a snow-storm on the mountains while it rained in the valley. How kind and friendly everybody seems! It was some time before I found any of the bee-men in Salt Lake, and, as I have just said, I began to get a little homesick. Mr. Swaner we found putting up a stovepipe—at least, that was what was told us. We sent word for him to finish his job and then come out in the apiary. When introduced to A. I. Root he said he wasn't going to be mad about the stovepipe a bit longer, and he was now very glad he didn't *swear* when it bothered him. We found Mr. Taufer laying a stone wall for a cellar; but he too dropped his tools, got leave to lay off, and we then went for all the rest of the bee-men. We got to friend Woodmanse's just at supper time; and when I mildly protested because they commenced to make a change in their supper arrangements he replied, "Please don't

be anxious; we don't have A. I. Root here every day." When his mother asked me to give thanks, I tell you I got over being homesick entirely. Now, please don't feel hurt, dear friends, when I say it has been a great privilege, during this visit, to hear a blessing asked at the table. If no one else is near to ask it, I am glad to do it in my own way and after my own fashion. I like to thank God for our daily food, and I like to ask him to let his blessing rest on every household where I am entertained; and I like to ask it *out loud* too. Just a simple acknowledgment to the great Creator of the universe, it seems to me, can offend no one.

Well, during this visit it is not the people only who have been friendly, but the great sun, the clouds, and the mountains—yes, the winds and the rain too, seemed pleased to see me. I got interested in the clouds and mountains in New Mexico, you remember. Well, they got up a cloudburst for my entertainment. Then at Glendale the sun and rain seemed to have planned together to get up that beautiful rainbow when I was hunting that Methodist Sunday-school. Well, this morning, after I got on the cars, and was admiring the snowstorm on the mountains, the old sun seemed to say:

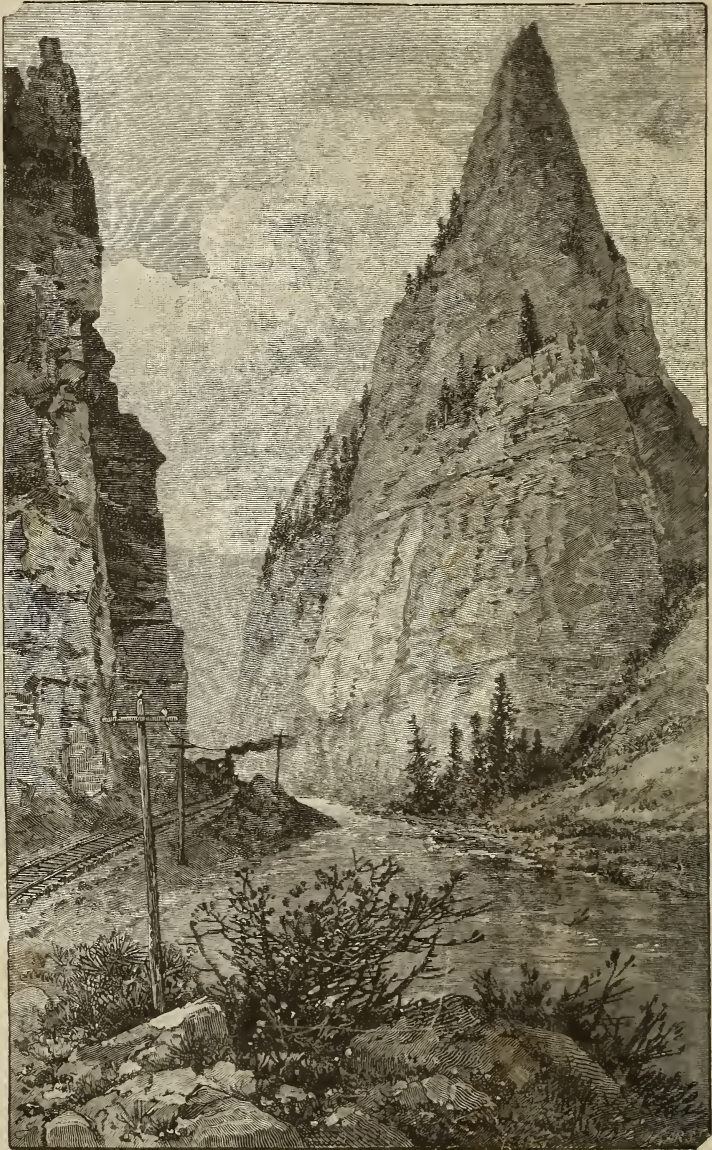
"I wonder if I can't lend a hand so as to please brother Root;" and in a twinkling he looked through a rift in the clouds and illumined the snowstorm, and made the mountains glitter like frosted silver; then, by way of contrast, he shone on the grass in the valley, and then skipped to the other side of the car and made Provo Lake shine so like molten silver that I almost jumped from my seat in astonishment and surprise. This is a most beautiful fresh-water lake of perhaps half the size of Salt Lake. Now, to go back, did any photographer or artist ever "take" a mountain with the sun shining through the clouds, during a snowstorm?

I have not seen a snowflake (close by) since I left home; but just now the cars have taken a turn and started through a pass in the mountains. As soon as we got partly in, I knew of another reason why snow is on some mountains and not on others—the *wind* has a hand in the matter. In fact, wherever the east wind came through the gap, and struck, the ground was frozen. A range of mountains makes winter on one side and summer on the other. When we got through, the ground was all white; and as we ascended the canyon the streams began to be frozen over. Well, we have been several hours running up this canyon to the summit; that is, to the point where the mountain stream ends and a new one commences on the other side of the range. You can scarcely imagine with what interest I watched the whole matter. When we started up the canyon the stream was almost a river; but it gradually dwindled down until I saw it disappear entirely, and nothing was left but some willow-like bushes. While I was watching for another stream and canyon to start down the opposite side of the mountain, the cars ran into a snow-shed and stopped observations. These snow-sheds were almost as tight and dark as a tunnel. The conductor said

they had closed it up for winter. When we got out of the tunnel the new canyon had commenced, or, rather, one ran into the other. On the extreme summit of the range of mountains there was quite a piece of ground that was comparatively level, covered with pine-trees. Of course, the cars ran through the lowest point, so chance to look miles off and down into the great valley. And not once, in climbing these great mountain ranges have I seen a place to look clear into the lowermost valley. One mountain peak rises above another so gradually that, even if you get to the top of a *peak* (which one never does on the cars) you see but little more than neighboring peaks. When a single mountain rises out of the plain you can easily get a view of said plains; but not so with the peaks of a mountain-range. Single peaks seldom go over a quarter of a mile above the plains, while mountain ranges are two or three miles higher than the sea-level. Going up the mountains we found many charcoal-pits for burning charcoal for the smelting-furnaces in the vicinity of Salt Lake. The principal metal ores worked are lead and silver. The charcoal is burned in permanent kilns, resembling an egg in shape, with the large end down.

Just before dark we came to the wonderful rocks called Castle Gate, close by the station of the same name. A very good-looking wall with straight and almost smooth sides, juts out from the mountain, and comes close up to the track. Now, there is nothing so very wonderful about this were it not for the fact that this wall is from 500 to 800 feet high; still stranger, a sort of tower runs up its straight outer edge, and this is further ornamented by an enlargement on the extreme top, resembling a turret. On the opposite side of the track, but a little further up, is a similar one, smaller in size. If viewed from the right spot, it is exactly like

a picture which is made from a photograph. By the dim light of the moon we had, a little further on, several views of the terraced mountains. These have a flat top, some of them a mile or two long, and perhaps half as wide, and, stranger still, the sides are beautifully terraced with a series of level shelves clear around. These shelves



CURRECANTI'S NEEDLE AND THE BLACK CANYON OF THE GUNNISON.

may be 25, 50, or 100 feet from step to step. While the mountain is oval in shape, it seems hard to believe it is not some gigantic piece of engineering and architecture.

During the day we saw huge mountains, with their rocky side looking as if some monster giant had hacked it with a huge butcher-knife, the hack-marks crossing each

other at an oblique angle. Other mountains were decked all over with great clock-shelves, with nicely rounded corners. These wondrous changes in the mountains and desert remind me of the way the women-folks used to make different patterns of patchwork. They were always studying up something new and different, and then holding it up to see if we didn't think it pretty. Well, dame Nature has been holding up lots and lots of things to me in just that way, and I want to respond, "Yes, they are *all very pretty indeed.*" How wondrous are thy works, O Lord!

Dec. 16.—Last night we passed the celebrated Black Canyon. It was in the night time, and no moon; but I got permission to stand on the platform, and, with a little explanation, I got a glimpse of most of it. It is about 15 miles in length, and the most of the way the Gunnison River has a path straight through solid mountains. We can not say the river cut it, for I am told that, on each side, the ragged edges of the precipices are so near alike no one can escape the conclusion they were once united. How, then, did this great rent come, separating them from 50 to 100 feet or more? The books tell us it was probably a "season crack," or "check," in this earth of ours. The water then flowed into the chasm, filled it up, then wore it more or less by using it as a water-course. Just about half way through the canyon is Currecanti's needle, apparently a slice, or splinter, that stood almost between the two at the time of the great crack. Some of the cliffs are said to be 2000 feet high, or nearly half a mile.

Just look at some object that you know is about half a mile away, and then imagine the rocky cliff in the picture that distance, almost straight up, and you have some idea of the scenery through the Black Canyon. When you stand in front of the needle, and look at it, you might be somewhat disappointed, for it looks more like a great mountain than a needle; but, do not be in haste to condemn the guide-books; wait a little until the locomotive takes you around the curve so you can look at it edgewise, and then you will find that, at the proper spot, it looks more sharp and splinter-like than it does in the picture on the opposite page. A single sentence from one of the guide-books, called "The Crest of the Continent," describes it better than any language of my own would do:

In the very center of the canyon, where its bulwarks are most lofty and precipitous, unbroken cliffs rising two thousand feet without a break, and shadowed by overhanging cornices,—just here stands the most striking buttress and pinnacle of them all,—Currecanti needle. It is a conical tower standing out somewhat beyond the line of the wall, from which it is separated (so that from some points of view it looks wholly isolate) on one side by a deep gash, and on the other by one of those narrow side-canyons which in the western part of the gorge occur every mile or two. These ravines are filled with trees, and make a green setting for this massive monolith of pink stone whose diminishing apex ends in a leaning spire that seems to trace its march upon the sweeping clouds. Straight as a plummet's line, and polished like the jasper gates of the Eternal city, rise these walls of echoing granite to their dizzy battlements. Here and there a promontory stands as a buttress; here and there a protruding crag overhangs like a watch-tower on a castle-wall.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, OHIO.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, FEB. 15, 1889.

The statutes of the Lord are right, rejoicing the heart: the commandment of the Lord is pure, enlightening the eyes.—PSALM 19: 8.

"METHOD OF REARING EARLY QUEENS."

THIS is the title of an 8-page pamphlet, written by G. M. Doolittle, and published by E. L. Pratt, Marlboro, Mass., editor of the *Queen Breeder's Journal*. The plan is succinctly stated, and will produce good queens. The price is 5 cts., and the work can be obtained of the publisher.

ANOTHER ENGLISH BEE-BOOK.

THE "Book of Bee-keeping" is the title of a new work by W. B. Webster, and published by L. Piccott Gill, 170 Strand, W. C., London, England. The book contains 98 pages. The matter is well arranged and illustrated, and fully up to the times. It is sold at the very low price of one English shilling, or 25 cents of our money. It can be obtained of the publisher, as above.

DEATH OF WILLIAM RAITT, EDITOR OF THE BEE-KEEPERS' RECORD.

OUR good friend laid down the cares of this life, in obedience to the call of the Master, Jan. 9. An extended notice of his death should have appeared in this issue, but it is unavoidably left out. Friend Raitt was not only widely known and loved in England, Ireland, and Scotland, but, by his genial writings, to a considerable extent throughout the United States. He loved bees, but he loved his Maker and his fellow-men more; and while we feel sad to lose him from among us, we can rejoice that what is our loss is his gain.

THE GOVERNMENT SEED BUREAU, AND THE PROSPECTS OF ITS BEING ABOLISHED.

WE notice by the Boston *Herald* of Feb. 1 an exposure of some of the frauds connected with the matter to which I have alluded on page 000. We extract as follows:

Mr. Burnett showed that, through the members of the House, there were distributed last year 253,739 packages of turnip seed, and of other seeds the following number of packages: Tobacco, 89,107; grass seeds, 9679; cotton, 4023; corn, 3943; sugar beet, 2992; sorghum, 2750; oats, 2098; quarts wheat, 354; quarts millet, 26.

Turnip seed was the cheapest in the lot. That was the reason why it has been in such quantities. Millet, one of the most valuable of the fodder plants, which has only within the past few years attracted attention, was scarcely used at all.

We also take the following:

Unless the action of this morning is rescinded at a future meeting of the committee, or the bill amended in the house, there will be but one more year of the present bad practice of distributing seeds through the medium of members of Congress.

Now, I want to call attention to the matter of distributing seeds of tobacco; and I also want to take our agricultural papers to task for publishing ar-

ticles on tobacco-growing. At the same time, and in the very same paper in which these articles are published, the editors frequently give us editorials in reference to the harm that tobacco is doing in our nation. Well, where is the consistency in passing laws to prohibit the use of tobacco among minors, and at the same time distribute 89,107 packages of seed? In the same line, how can an editor warn his readers against the pernicious effects of tobacco, and then in another column give long articles teaching how to grow crops of it successfully? If new and valuable seeds are turned over to our experiment stations in all the different States, they will, without doubt or question, do good. I feel under great obligations, not only for seeds I have received from our experiment station, but for the help they have given me all along in my work of testing garden seeds.

THE ROCKY-MOUNTAIN BEE-PLANT.

SAMUEL WILSON, in his seed catalogue for the present season, gives a picture of what he calls the Mexican honey-plant, or *cleome integrifolia*, and labels it the greatest discovery of the modern age. Now, there may be different varieties of *cleome integrifolia*; but the blossoms pictured in the above catalogue have very little resemblance to our well-known Rocky-Mountain bee-plant. We have raised this plant for years on our grounds, and, as our readers are very well aware, we have for years sold the seed at 5 cents per package. As friend Wilson has always been considered a good and responsible seedsman, we can hardly understand why he should make this mistake. Very likely, however, it is no worse a mistake than many of the colored pictures of some of our new vegetables. In the first place, the picture is not at all correct, as compared with the cleomes that grow in our gardens; neither is it like the Rocky-Mountain bee-plant that I found growing in its native state on the Rocky Mountains. The illustration shows the flowers literally dripping with honey. This, too, is a great exaggeration. The plant bears honey in the morning, much as the spider plant does; but I am sure never in any locality just as it is pictured. The leaves and unopened blossoms are pictured very correctly. We quote the following from the closing remarks in regard to it:

Mr. Jesse Frazier, one of the largest apiarists in the United States, and one of the most prominent and reliable citizens of Fremont Co., Colorado, says: "No other plant known to the civilized world can vie with the *cleome integrifolia* in producing honey as food for bees. And no other honey is as clear and of as good quality." He further says, "I have frequently weighed my bee-stands for a number of mornings and evenings, and found many of them to increase as much as 9 lbs. a day."

Still further on he says:

As yet the seeds of this valuable plant are very scarce. Our agent, after traversing the mountains of Mexico for nearly two months, procured only about 100 pounds. Single packet, 25 cts.; 5 packets, \$1.00. Each packet will have directions for cultivating, and contain seed enough to plant a row 60 feet long, which will produce sufficient honey for one colony of bees.

Now, it is possible that Mr. Frazier has, in Colorado, received as much as 9 pounds of honey in a day from a single colony, all gathered from the Rocky-Mountain bee-plant; but it is a mistake in saying that a row of plants 60 feet long will produce sufficient honey for a colony of bees; neither are the seeds scarce or high-priced. Many of our subscribers have wanted to sell us the seed for several

years past, and the price has at no time been more than 15 cents an ounce or \$1.25 a pound. We are told that other catalogues have the same colored plate and the same string of extravagant statements.

SPECIAL NOTICES.

ADVANCE IN THE PRICE OF PUMPKIN SEEDS.

Last year we sold pumpkin seeds for \$1.50 per bushel; but as we are not able to buy them at that price now, we have been obliged to advance the price to 75 cts. per peck, or \$2.50 per bushel.

Prof. Cook has just finished an appendix to the Maple Sugar book, which will be pasted in the back of all that are sold after this date. Our customers who have already purchased the above work can have the appendix by making application on a postal card.

HENNIS' FRUIT AND VEGETABLE PRESS.

On pages 130 and 131 of this number is a description of the above utensil. In giving the price of it, however, the types say 25 cents, when it should be 35. Please remember this advance of 10 cents when you order.

DISCOUNTS FOR EARLY ORDERS.

Any of our readers intending to purchase supplies soon will do well to notice that the special discounts we allow for early orders are good only until March 1st, two weeks longer. If you have decided upon what you want, take advantage of the discounts by ordering at once. Your orders will receive prompt and careful attention, and you will get your goods in ample time to have them ready for the bees.

AMERICAN CHESTNUTS.

As these were very plentiful during the past season in our vicinity, they are now offered at lower prices than ever known before. To the friends who live where chestnuts do not grow, and are not common, they may be quite a novelty. They will surely please the children, if nobody else. We can, until further notice, furnish them at 5 cents a pint; 8 cents a quart; 50 cents a peck, or \$1.75 a bushel. If wanted by mail, add 10 cents a quart. To show you that they are good, we will mail you a sample package for 5 cents.

WANTED—AN EARLY YELLOW PUMPKIN.

Every season we have a demand for pumpkins—that is, the old-fashioned yellow ones—long before we can get them; and last year the people of our town would pay a bigger price per pound for a yellow pumpkin than they would for a Hubbard squash or even for a watermelon. Now, then, who has got the seed of a small-sized early pumpkin? Why, I have actually been thinking of starting some pumpkin-vines in the greenhouse, so as to have yellow pumpkins on the market before any farmer could bring them in. By accident we had a few extra early ones two or three years ago. They grew on the "New Agriculture" grounds. They sold readily at good prices, before any were to be had elsewhere; but it did not then occur to me that there was an opening for a new industry. Now, our people say they would rather have a yellow pumpkin to make pies of than any sort of squash, so do not offer us a squash, saying it is just as good. It would not fill the bill unless it looks like a pumpkin and is a pumpkin. Now, I have much faith that GLEANINGS will find something that will just fill the bill—just see if it doesn't.

PRICE LISTS RECEIVED.

Price lists have been received from the following:

Frank A. Eaton, Bluffton, O., sends out a price list of fowls, bees, and queens.

E. Kretschmer, Coburg, Ia., sends us a list of bee-supplies in general.

H. E. & E. L. Pratt, Marlboro, Mass., send out a list of Italian and Carniolan queens.

J. W. K. Shaw & Co., Loreauville, La., have issued their regular list of Italian queens, etc.

J. Nebel & Son, High Hill, Mo., send out an 8-page list of Italian bees and queens.

F. A. Snell, Milledgeville, Ill., issues a 16-page list of supplies, Italian bees, etc.

J. E. Shaver, Friedeaus, Va., sends us a 24-page list of beekeepers' supplies.

B. F. Carroll, Blooming Grove, Texas, sends us a 4-page list of poultry and Cyprian bees.

We have just printed for J. P. Caldwell, San Marcos, Texas, a 6-page list of bees, queens, and supplies.

Our printers are now at work on Oliver Foster's annual price list of bees and supplies. Send for a copy, send for a copy.

CONVENTION NOTICE.

The bee-keepers of Buchanan County, Mo., met at Agency Ford, on the 2d instant, and organized the Agency Bee-keepers' Association. Our next meeting will be held on the last Saturday in March. J. G. GRAHAM, Sec'y.

The eleventh annual meeting of the Texas State Bee-keepers' Association will be held at the bee-farm of Vice-president W. R. Graham, Greenville, Texas, May 1 and 2, 1889. B. F. CARROLL, Pres't.

ALSIKE.

WHOLESALE AND RETAIL; BEST OF SEED.

ALSO GARDEN SEEDS.

C. M. GOODSPEED, 4tfb THORN HILL, N. Y.

In responding to this advertisement mention GLEANINGS.



BEEES FOR SALE!

Colonies, Nuclei, Queens (Tested and Untested), at living rates. Send for circular and price list to

C. C. VAUGHN & CO.,
Columbia, Tenn.



4-9db

PURE ITALIAN BEES & QUEENS.

Full colonies and nuclei, per frame, 60c. Tested queens, \$2.00; after June 1, \$1.50. Untested queens, \$1.00; after June 1, 75c. Remit by postoffice money order, registered letter, or draft on New York. For any other information, address

C. W. JONES & CO.,
Bryant Station, Maury Co., Tenn.

In responding to this advertisement mention GLEANINGS.

SECTIONS and FOUNDATION CHEAPER THAN EVER.

Sections Only \$3. Dealers write for special prices. Free samples and price list. 1-12db
(Near Detroit.) M. H. HUNT, BELL BRANCH, MICH.

FOUNDATION for brood-chamber, 30 cts. per lb.
4-5-6d W. T. LYONS, Decherd, Tenn.

FOR SALE.

About 20 Colonies of Good Italian Bees
IN ROOT'S PORTICO HIVE.

Will close out at a bargain. Reason for selling, away at school. D. H. TOWNLEY.
4-5d ELIZABETH, UNION CO., N. J.

Beautiful Laced Wyandottes.

Eggs for Hatching, \$1.00 for 13; \$2.00 for 30. Orders Booked Now.
3tfdb J. W. GRISWOLD, ROSE, WAYNE CO., N. Y.

B. J. MILLER & CO.,
NAPPANEE, - ELKHART CO., - IND.,
MANUFACTURERS OF

BEE-HIVES AND SUPPLIES.

Sections, T-tin cases, shipping-crates, metal corners, etc. Five per cent discount on supplies in Jan. and Feb. Price list free. Send for one. 1tfdb

BEE-HIVES, SECTIONS, ETC.

WE make the best bee-hives, shipping-crates, sections, etc., in the world, and sell them cheap. We are offering our choicest white one-piece 4¼x4¼ sections, in lots of 500, at \$3.50 per 1000.

Parties wanting 3000 or more, write for special prices. No. 2 sections, \$2.00 per 1000. Catalogues free, but sent only when ordered. 1tfdb

C. B. LEWIS & CO., Watertown, Wis.

In responding to this advertisement mention GLEANINGS.

APIARIAN SUPPLIES CHEAP.

BASSWOOD V-GROOVE SECTIONS, \$2.75 to \$3.75
PER M. SHIPPING-CASES VERY LOW.

SEND FOR PRICES.

GOODSELL & WOODWORTH MFG. CO.,
3tfdb ROCK FALLS, ILLINOIS.

In responding to this advertisement mention GLEANINGS.

MISTAKES.

In the BEE-KEEPERS' REVIEW for Feb., the veterans "own up" to the mistakes they have made, and point out those being made at present by other bee-keepers. This number also has a long article from Byron Walker, showing how bees may be obtained in the spring very cheaply, and in large quantities from the South.

Price of the REVIEW, 50 cts. a year. Samples free. Back numbers furnished.

The Production of Comb Honey is a neat little book of 45 pages; price 25 cts. This book and the REVIEW one year for 65 cts. For \$1.00 the REVIEW will be sent two years, and the book "thrown in." Stamps taken, either U. S. or Canadian.

613 Wood St.

W. Z. HUTCHINSON,
Flint, Mich.

In responding to this advertisement mention GLEANINGS.

CLOSING-OUT SALE!

I am going to Montana, and will therefore sell at low figures my apiary of 75 colonies of Italian bees, in lots or by the single hive; several hundred empty combs, L. size; empty hives; a few new Clark smokers; one Dunham 12-inch foundation-mill; one Novice honey-extractor; one 4-h. p. engine and boiler; one 10-h. p. engine and boiler; one 12-inch planer; one saw-table and mandrel, with 4 saws; one saw-table with 4 grooving-saws and jointer attachment; one light table with mandrel and one saw; one 16-foot 1½ turned shaft, with 4 wood bearings; 4 wood pulleys; one counter-shaft, 6 ft., 1½ inch, with 4 wood pulleys; all are split pulleys, and just as good as iron ones; leather and rubber belting; also one No. 7 Wilson bone-mill, all wearing parts new last spring, run but little since. It is a paying machine. Also 40 bushels Japanese buckwheat for seed. Write for what you want, and I will give full particulars with prices. I want all sold by April 1.
4tfdb A. A. FRADENBURG,
Port Washington, O.

ADAMANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL.
See advertisement in another column. 3tfdb

BROTHER BEE-KEEPERS,

Order your supplies from a railroad center, and save freight. Goods sold as cheap as elsewhere. Send for price list free.

2tfdb W. D. SOPER, Jackson, Mich. Box 1473.

| 15th. | | ITALIAN BEES AND QUEENS EARLY. | |
|-------|----------------------------------|--------------------------------|--------|
| March | Imported Ital. queen (1888 Imp.) | | \$5 50 |
| | Tested " " " | | 2 25 |
| | Untested " " " | \$1.00 three | 2 75 |
| | 1 Sim. frame Nucleus, ½ lb. bees | | 1 25 |
| After | 1 " " " | | 1 75 |
| | 1 " " " | | 2 00 |
| | 1 " " " | | 2 00 |
| | 1 " " " | | 2 80 |

Ten per cent discount to all who send orders so early as to reach me 20 days before they wish their orders filled. Make money orders payable at Clifton. S. H. COLWICK, Morse, Bosque Co., Tex. 3-8db

In responding to this advertisement mention GLEANINGS.

SAVE FREIGHT.**BUY YOUR SUPPLIES NEAR HOME AND SAVE FREIGHT.**

We carry a complete line of Hives, Sections, Smokers, Honey Extractors, etc. Our motto, good goods and low prices. Sections in large quantities, only \$3.25 per M. Illustrated catalogue for your name on a postal card.

R. B. LEAHY & CO.,
3tfdb Box 11. Higginsville, Mo.
In responding to this advertisement mention GLEANINGS.

THE . BEST . HIVES
FOR THE LEAST MONEY.**BOTH SINGLE AND DOUBLE WALLED.**

If you need any hives don't fail to send for my price list, as I make a specialty of hives, and think I have the best arranged hives on the market, at bottom prices. My hives take the Simplicity frame.

3tdb **J. A. ROE, Union City, Ind.**
In responding to this advertisement mention GLEANINGS.

LOOK OUT!

One of the best bee locations in the Fruit Belt of Michigan. Small fruit-farm (44 acres) to sell—Bees and "fixings" cheap. For particulars address

J. O. SHEARMAN,
New Richmond, - 3tfdb - Michigan.
In responding to this advertisement mention GLEANINGS.

BIG BUCKEYE FIELD CORN.

NEW TOMATOES



Our Illustrated Annual of Tested SEEDS, BULBS, TOOLS, &c., mailed free to all seed buyers. Two Colored Plates. It tells all about SEEDS & Gardening. The best Guide. Prices Low. Seeds Reliable. Used by Thousands of Farmers and Gardeners and no complaints. Originators of Paragon, Acme, Perfection, Favorite, Beauty and other Tomatoes. **A. W. LIVINGSTON'S SONS,** P. O. Box 278, Columbus, O.

OUR HOBBY

GOLD COIN SWEET CORN.

In responding to this advertisement mention GLEANINGS.

STRAW BLACK GOOSE RASP DEW BERRIES**CURRENTS and GRAPES.**

ADA Large, Late, Hardy, Prolific, Black RASPBERRY, Latest of all in Ripening.

FIRST-CLASS * PLANTS * AT * LOW * RATES.**THEO. F. LONGENECKER,**

Correspondence Solicited. 3tfdb Dayton, Ohio.

In responding to this advertisement mention GLEANINGS.

**Bless Your Souls!**

My brother farmers, when you can receive one containing just as many and very probably more varieties and all new vegetables that are really valuable, for just **NOTHING!** It may have less paint about the covers, but, great Scott! we are not after paint, but seed, fresh and true to name, such as will make with a master's hand its own picture all over our farms and gardens; seed I am not afraid to **WARRANT** on the cover of my catalogue. Come, my fellow farmers, and join the thousands, who for thirty years have been users of my seed; why, we were a goodly company and having pleasant times together before the great majority of the present race of seedsmen (bless the boys!) had left their nurse's arms! Send for a catalogue.

JAMES J. H. GREGORY, Marblehead, Mass.,

In responding to this advertisement mention GLEANINGS.

SEND FOR HEDDON'S CIRCULARS.

Address

JAMES HEDDON**DOWAGIAC, MICH.**

3-4d

In responding to this advertisement mention GLEANINGS.

NEARLY THIRTY TONS

-OF-

DADANT'S FOUNDATION**SOLD IN 1887.**

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; B. J. Miller & Co., Nappanee, Ind.; E. S. Armstrong, Jerseyville, Ill.; E. Kretchmer, Coburg, Iowa; P. L. Viallon, Bayou Goula, La.; M. J. Dickason, Hiawatha, Kansas; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; D. A. Fuller, Cherry Valley, Ill.; J. B. Mason & Sons, Mechanic Falls, Maine; G. L. Tinker, New Philadelphia, O.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1409 15th St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; J. A. Roberts, Edgar, Neb.; E. L. Gould & Co., Brantford, Ontario, Canada; J. N. Heater, Columbus, Neb.; O. G. Collier, Fairbury, Neb., and numerous other dealers.

Write for free samples, and price list of bee supplies. We guarantee every inch of our foundation equal to sample in every respect. Every one who buys it is pleased with it.

CHAS. DADANT & SON,
3tfdb Hamilton, Hancock Co., Illinois.

In responding to this advertisement mention GLEANINGS.

ON 30 DAYS' TRIAL.**EGGLESTON'S THIS NEW ELASTIC TRUSS**

Has a Pad different from all others, is cup shape, with Self-adjusting Ball in center, adapts itself to all positions of the body, while the ball in the cup presses back the intestines just as a person does with the finger. With light pressure the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail Circulars free. **EGGLESTON TRUSS CO., Chicago, Ill.**

In responding to this advertisement mention GLEANINGS.

22-9db

GLEANINGS IN BEE CULTURE.

Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I especially approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.

| | | |
|---|--|------|
| 8 | Bible, <i>good print</i> , neatly bound | 25 |
| 10 | Bunyan's Pilgrim's Progress** | 35 |
| 6 | First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents. | |
| 5 | Harmony of the Gospels. | 35 |
| 3 | John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon* | 10 |
| 1 | Moody and Sankey's Gospel Hymns, words only, No. 1., paper | 05 |
| 5 | Same, Nos. 1., II., III., and IV., combined, words only, board | 20 |
| 10 | Same, words and music, board | 75 |
| 3 | New Testament in pretty flexible covers | 05 |
| 5 | New Testament, new version, paper cover | 10 |
| 5 | Robinson Crusoe, paper cover | 20 |
| 15 | Story of the Bible** | 1 00 |
| A large book of 700 pages, and 274 illustrations. Will be read by almost every child. | | |
| 5 | The Christian's Secret of a Happy Life** | 25 |
| 10 | Same in cloth binding | 50 |
| | "The Life of Trust," by Geo. Muller** | 1 25 |
| 1 | Ten Nights in a Bar Room, by T. S. Arthur* | 03 |

BOOKS ESPECIALLY FOR BEE-KEEPERS.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each.

| | | |
|-----------------------------------|---|------|
| Postage. (Price without postage.) | | |
| 12 | A B C of Bee Culture** Paper | 88 |
| 15 | A B C of Bee Culture** Cloth | 1 10 |
| 5 | A Year Among the Bees, by C. C. Miller** | 70 |
| 14 | Bees and Bee-keeping, by Frank Cheshire, England, Vol. I.**§ | 2 36 |
| 21 | Same, Vol. II.**§ | 2 79 |
| or, \$5.25 for the two, postpaid. | | |
| | Bees and Honey, by T. G. Newman | 1 00 |
| 15 | Cook's New Manual** Cloth | 1 35 |
| 2 | Dzierzon Theory** | 10 |
| 1 | Foul Brood; its management and cure; D. A. Jones* | 09 |
| 1 | Honey as Food and Medicine | 5 |
| 10 | Langstroth on the Hive and Honey-Bee** | 1 90 |
| 10 | Quinby's New Bee-Keeping* | 1 40 |
| 10 | Queen-Rearing, by H. Alley* | 1 00 |
| 4 | Success in Bee Culture, by James Heddon* | 46 |
| | The Production of Comb Honey, by W. Z. Hutchinson** | 25 |
| | The Apiary; or, Bees, Bee-Hives, and Bee Culture, by Geo. Neighbour & Sons, England*§ | 1 75 |
| | British Bee-keeper's Guide - Book, by Thos. Wm. Cowan, Esq., England*§ | 40 |
| 3 | Merrybans and His Neighbor, by A. I. Root | 25 |

MISCELLANEOUS HAND-BOOKS.

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| 3 | A B C of Potato Culture, Terry** | 35 |
| This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations. | | |
| 5 | An Egg-Farm, Stoddard** | 45 |
| | Barn Plans and Out-Buildings* | 1 50 |
| | Cranberry Culture, White's | 1 25 |
| | Canary Birds; paper, 50c; cloth* | 75 |
| | Draining for Profit and Health, Warring | 1 50 |
| 5 | Eclectic Manual of Phonography; Pitman's System; cloth | 50 |
| 10 | Farming For Boys* | 1 15 |
| This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening. | | |

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|----|---|------|
| 6 | Fuller's Practical Forestry* | 1 40 |
| 10 | Fuller's Grape Culturist** | 1 40 |
| 7 | Farm, Gardening, and Seed-Growing, by Francis Brill** | 90 |

This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.

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|---|--|------|
| 10 | Gardening For Pleasure, Henderson* | 1 40 |
| While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. | | |

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|---|---|------|
| 12 | Gardening for Profit,** New Edition | 1 85 |
| This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts. | | |

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| 8 | Gardening for Young and Old, Harris** | 90 |
| This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as to old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 167 pages and 46 engravings. | | |

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| 10 | Garden and Farm Topics, Henderson** | 75 |
| | Gray's School and Field Book of Botany | 1 80 |
| 5 | Gregory on Cabbages; paper* | 25 |
| 5 | Gregory on Squashes; paper* | 25 |
| 5 | Gregory on Onions; paper* | 25 |

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

| | | |
|----|---|------|
| 10 | Household Conveniences | 1 40 |
| 2 | How to Propagate and Grow Fruit, Green* | 25 |
| 5 | How to Make Candy* | 45 |
| 10 | How to Keep Store* | 1 00 |

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| 10 | Irrigation for the Farm, Garden, and Orchard, Stewart* | 1 40 |
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This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

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|---|---|----|
| 3 | Maple Sugar and the Sugar-Bush,** | 35 |
|---|---|----|

By Prof. A. J. Cook. This was written in the spring of 1887, at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest sugar and maple syrup, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.

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| 10 | Money in The Garden, Quinn* | 1 40 |
| 1 | Poultry for Pleasure and Profit** | 10 |
| 11 | Practical Floriculture, Henderson* | 1 35 |
| | Peach Culture, Fulton's | 1 50 |
| 10 | Profits in Poultry | 90 |
| 2 | Purdy's Small-Fruit Instructor* | 15 |
| 2 | Silk and the Silkworm | 10 |
| 10 | Small-Fruit Culturist, Fuller* | 1 40 |
| 3 | Strawberry Culturist, Fuller* | 15 |

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| 10 | Success in Market-Gardening* | 90 |
|----|------------------------------------|----|

This is new book by a real, live, enterprising, successful market-gardener who lives in Arlington, a suburb of Boston, Mass. Friend Rawson has been one of the foremost to make irrigation a practical success, and he now irrigates his grounds by means of a windmill and steam-engine whenever a drought threatens to injure the crops. The book has 208 pages, and is nicely illustrated with 110 engravings.

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| 10 | Talks on Manures* | 1 90 |
| This book, by Joseph Harris is, perhaps, the most comprehensive one we have on the subject, and the whole matter is considered by an able writer. It contains 366 pages. | | |

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| 2 | Treatise on the Horse and His Diseases | 10 |
| 10 | The New Agriculture, or the Waters Led Captive | 1 00 |

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| 3 | Winter Care of Horses and Cattle | 40 |
| This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages, and 4 cuts. | | |

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| 8 | What to Do, and How to be Happy While Doing It, by A. I. Root | 50 |
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|---|---|----|
| 3 | Wood's Common Objects of the Microscope** | 47 |
|---|---|----|

Address your orders to

A. I. ROOT, Medina, Ohio.

GLEANINGS IN BEE CULTURE.

DISCOUNTS

Will be allowed as usual during the Fall and Winter Months.

PRICES QUOTED ON APPLICATION.

SUPERIOR WORKMANSHIP AND MATERIAL.

SHALL BE PLEASED TO MAKE ESTIMATES ON ANY LIST OF GOODS WANTED. CORRESPONDENCE SOLICITED.

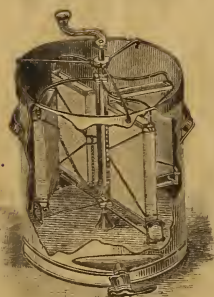
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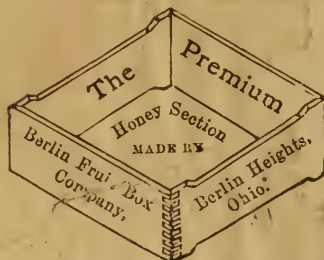
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